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SUN SLAMS IBM FOR ECLIPSE

Calls project a carbon copy of NetBeans, claims it was excluded from participation

BY EDWARD J. CORREIA

In the umbra of Eclipse, IBM Corp.'s open-source development tool integration project launched in late November, Sun Microsystems Inc. has volleyed a series of attacks, claiming that the project is an attempt to overshadow NetBeans, a similar project launched by Sun in June 2000 for which Sun boasts a community of thousands of members.

According to Simon Phipps, Sun's chief technology evangelist, no one at Sun or NetBeans was invited to participate, despite IBM's claims to the contrary.

Open invitations were extended for joining the project, says IBM's van Overtveldt.

And that, he said, was IBM's first mistake. "IBM is screwing up. They've forgotten to invite the only company that has actually done any open-source tools work, and they've broken open-source rule No. 1, which is not to fork an existing community until you discover that the community won't do what you want."

Backing up Phipps' claim is James Duncan Davidson, an independent developer who served as Sun's representative on the NetBeans board until last October. Davidson said he neither saw nor heard of an invi-

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Has J2EE Hit a Fork In the Road?

Proprietary extensions from BEA, others threaten platform harmony

BY CHRISTINA M. PURPI

Recent decisions by major J2EE app server vendors to extend J2EE in proprietary directions has made official what has been known for a long time—the promise of Java is now dead.

No one has ever really believed in the "write once, run anywhere" credo. But the final nail in the coffin may be BEA Systems Inc.'s upcoming new application framework, codenamed "Cajun," as well as the extension of J2EE-compliant application servers by other vendors. The platform-independent view of Java is fading into the woodwork very quickly, and threatens to take what was conceived as a standards-based solution into very different proprietary directions.

Cajun is an application development framework that is supposed to make it easier for developers to build enterprise Web services, but it will not run on any other application server except BEA's own WebLogic, according to Byron Sebastian, senior director of product management at BEA.

"[Cajun's] primary focus will be running on the WebLogic server," said Sebastian. When asked if it would run on any other J2EE application server, Sebastian commented: "I'm not prepared to make that statement."

But the door toward compatibility isn't closed, it appears. "We have an open-standards-based implementation," claimed Sebastian a few moments later. "We work with numerous partners in the tools space to make them all successful. That strategy is working, and we are continuing to be an open tools compa-

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Web Services, .NET Highlight 2001

BY ALAN ZEICHICK

If one word best represents the past year's most significant news story in software development, it would be .NET. If you were to look for two words, they would be "Web services."

During the past year, a resurgent Microsoft Corp. controlled the agenda by relentlessly touting its vision of Web services based on XML content, remote communications controlled by SOAP, and service discovery based on UDDI. Although many other companies, most notably IBM Corp., also jumped onto the Web services bandwagon, Microsoft's single-minded (and single-platform) vision of that technology defined the debate.

That platform, of course, is the combination of its latest Win32-based operating system—Windows XP on the desktop, and Windows .NET Server on servers—running the .NET Framework. Although only the first of those actually shipped in 2001, Microsoft's constant stream of beta releases fueled developer interest, as did early previews of the C# programming language, Visual Studio.NET development environment, and HailStorm (.NET My Services) commercial Web services.

Even companies outside the Windows universe found themselves affected—and challenged—by Microsoft's newfound focus and coherent messaging. Sun Microsystems Inc. attempted to rally attention for its new Java 2 Enterprise Edition 1.3, which appeared late in the year, but despite praise of J2EE 1.3's incorporation of the much-awaited Enterprise JavaBeans 2.0, there was much criticism of the spec due to its failure to offer a coherent Web services message. As such, all of the leading J2EE platform makers were forced to offer their own proprietary extensions to handle Web services. By the end of the year, the Java platform had begun fragmenting, with vendors focused more on offering one-stop shopping and vertically integrated solutions built on their own intellectual property, than on sticking to the "write once, run anywhere" Java credo.

Also quiet this year was Linux. Not that the operating system had lost favor with developers—far from it—but with the demise of the dot-com era and collapse of many Linux companies' stock prices, seemingly nobody was left to evangelize and champion the open-source operating system or the open-source message itself. Plus, increasingly, the platform battle had shifted away from operating systems to middleware. It's no longer Windows versus Unix/Linux, but rather .NET versus J2EE.

Don't forget the Macintosh.

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2001: THE YEAR IN REVIEW

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SilverStream Completes Middleware Picture

BY DAVID RUBINSTEIN

SilverStream Software Inc. has put the finishing touches on its middleware with the release last month of jBroker TM, an implementation of the Java Transaction Service required in the J2EE 1.3 specification.

"As soon as you have distributed transactions happening, and objects are touching resources that are updated, this needs to be there," said Rohit Garg, SilverStream's vice president of Java technologies. "We did not have distributed capability in our application server" prior to this release, he acknowledged. "Web services is on the leading edge of that."

The jBroker TM transaction manager is part of the jBroker middleware suite that can be purchased separately or as part of SilverStream's eXtend platform for Java application and Web services deployment, Garg said.

The transaction manager, Garg said, can handle transactions from various resource types such as Object Transaction Service and XA-compliant transactions, as well as perform two-phase commits with rollback if the transaction fails. The product supports Oracle and Cloudscape JDBC XA drivers. A new jBroker Console is a client-side GUI monitoring tool in early-access phase; it should be available for general release near the end of March, Garg said. The console will allow developers to create configurations for monitoring specific properties within a transaction.

Along with the introduction of the transaction manager, SilverStream (www.silverstream.com) has updated several other pieces of the jBroker suite. jBroker Web, the Web services component, now supports document-style WSDL, SOAP binding and UDDI interoperability; jBroker ORB, the CORBA-compliant component, has been updated to 4.0 with features necessary for J2EE 1.3 compatibility, such as an upgrade of IIOP implementation to 1.2; and jBroker MQ 2.0, the messaging component, now has scheduled message delivery, individual message acknowledgements and client support using HTTP.

jBroker TM and Web are free, while jBroker ORB sells for $995 and MQ for $1,995. Garg said part of SilverStream's strategy is to "de-couple a lot of these products" to make them more accessible to smaller development shops that do not need full J2EE functionality. jBroker MQ and Web run on any J2EE-compliant application server, while TM is expected to do so sometime next year, Garg said. ■

Microsoft Makes 180-Degree Turnaround

BY ALAN ZEICHICK

What a difference 12 months can make.

At the beginning of 2001, Microsoft Corp. looked tired and weak. Under the Clinton administration, the company had been slapped with an industrial-strength antitrust action, with the European Union and many individual U.S. states voicing their complaints about the company's alleged abuse of its market strength. Not only was the company facing a potential breakup, but its Windows operating system was under assault by Linux, the Java community was picking up momentum, and Microsoft's own .NET initiatives seemed vague and desperate.

A year later, the company has turned things around nearly 180 degrees. With a new business-friendly administration in Washington, the U.S. Justice Dept. quickly asserted that while Microsoft was still a troublesome monopoly, the government would no longer seek the ultimate penalty of a breakup. With this early concession from the trustbusters, the collective sighs from the greater Seattle area could be heard from far away. Although the suit was not settled as of press time, the proposed settlement terms agreed to by Microsoft and the U.S. government, and accepted by many (but not all) states, are generally considered to be weak and potentially ineffective in reining in the software giant's activities.

On the software front, the resurgent company continued tying its products together. The next generation of Windows, called Windows XP on the desktop and Windows .NET Server on the server, went through numerous betas, with the desktop software shipping late in the year to generally warm reviews by the technology press—but not necessarily to huge sales. The server software, currently in a third beta, includes Microsoft's .NET Framework, an expanded middleware layer that encompasses not only its Component Object Model and a message queue, but also a Common Language Runtime (CLR) that represents the opposite of Sun's Java platform: Write in any programming language you want, as long as it runs on Windows.

To that end, Microsoft released its new C# programming language, designed as a simplified version of C++ with many of the ease-of-development features that characterized Java. It also launched the beta of J#, which uses the Java syntax to develop not for a JVM, but for the CLR. Both languages utilize a revamped integrated development environment, Visual Studio.NET, which was also in a late beta at the end of 2001. Similar to earlier versions, Visual Studio.NET is noteworthy in that all the languages that use it—C++, C#, Visual Basic and soon J#—are compiled for the CLR rather than for native Windows APIs. Several third-party language developers announced that they, too, would create Visual Studio.NET versions of their languages and tools that would run atop the CLR.

The additional layer of abstraction offered by the .NET Framework and the CLR is expected to simplify the development of Windows applications and make it easier for apps to share components, built-in CLR and .NET Framework features, and to publish and subscribe to Web services.

In fact, XML Web services, using SOAP and UDDI for invocation and discovery, represent the third leg in Microsoft's 2001 .NET My Services. Already, Windows XP is designed to rely upon Microsoft's Passport online service to provide centralized authentication for local-area networks and for Web merchants, as the first of the HailStorm offerings.

By the end of the year, Microsoft appeared stronger than ever. With the company's stock price close to a 52-week high, the antitrust lawsuit nearly settled on friendly terms, Linux continuing to gain market share but lacking a strong public presence, and the major Java vendors focused more on creating proprietary extensions to J2EE than on uniting against a common enemy, Bill Gates will be having a very happy new year indeed. ■

W3C TAGS WEB ARCHITECTURAL CONFUSION

BY ALAN ZEICHICK

Confused by all of the different standards and specifications released by the World Wide Web Consortium? Unsure how all the different initiatives and working groups fit together? If so, you're not alone: The W3C's programs are extensive and confusing, both for members and for developers.

That's the reason for the creation of the organization's Technical Architecture Group (TAG) formed in mid-December to serve as the steward for Web architectural issues. According to the W3C, the group has three missions: document and build consensus around architectural issues; resolve conflicts between different parts of the organization; and coordinate architectural developments involving the W3C and other organizations.

According to W3C director Tim Berners-Lee, who will also chair the TAG, the overarching purpose of the TAG is to ensure that Web technologies remain interoperable. Given the large number of projects under way at the W3C, this is no easy task and requires that despite the need for innovation, some constraints be placed on future developments. "The TAG's role is to articulate these constraints and apply them to conflicts that may arise," he said in a statement.

The TAG's charter states, "There are a number of architectural principles that underlie the development of the World Wide Web. Some of these are well-known; others are less well-known or accepted. It is important for the growth and interoperability of the Web that these principles be documented and generally agreed to."

The charter defines Web architecture as "the underlying principles that should be adhered to by all Web components, whether developed inside or outside W3C. The architecture captures principles that affect such things as understandability, interoperability, scalability, accessibility, and internationalization."

The TAG (www.w3.org/2001/tag) consists of the director of the W3C, along with five elected and three appointed members who serve staggered two-year terms.

The elected members represent the Apache Software Foundation, BEA Systems Inc., Hewlett-Packard Co., Microsoft Corp. and Sun Microsystems Inc. The appointees are Tim Bray, Dan Connolly and Chris Lilley. ■

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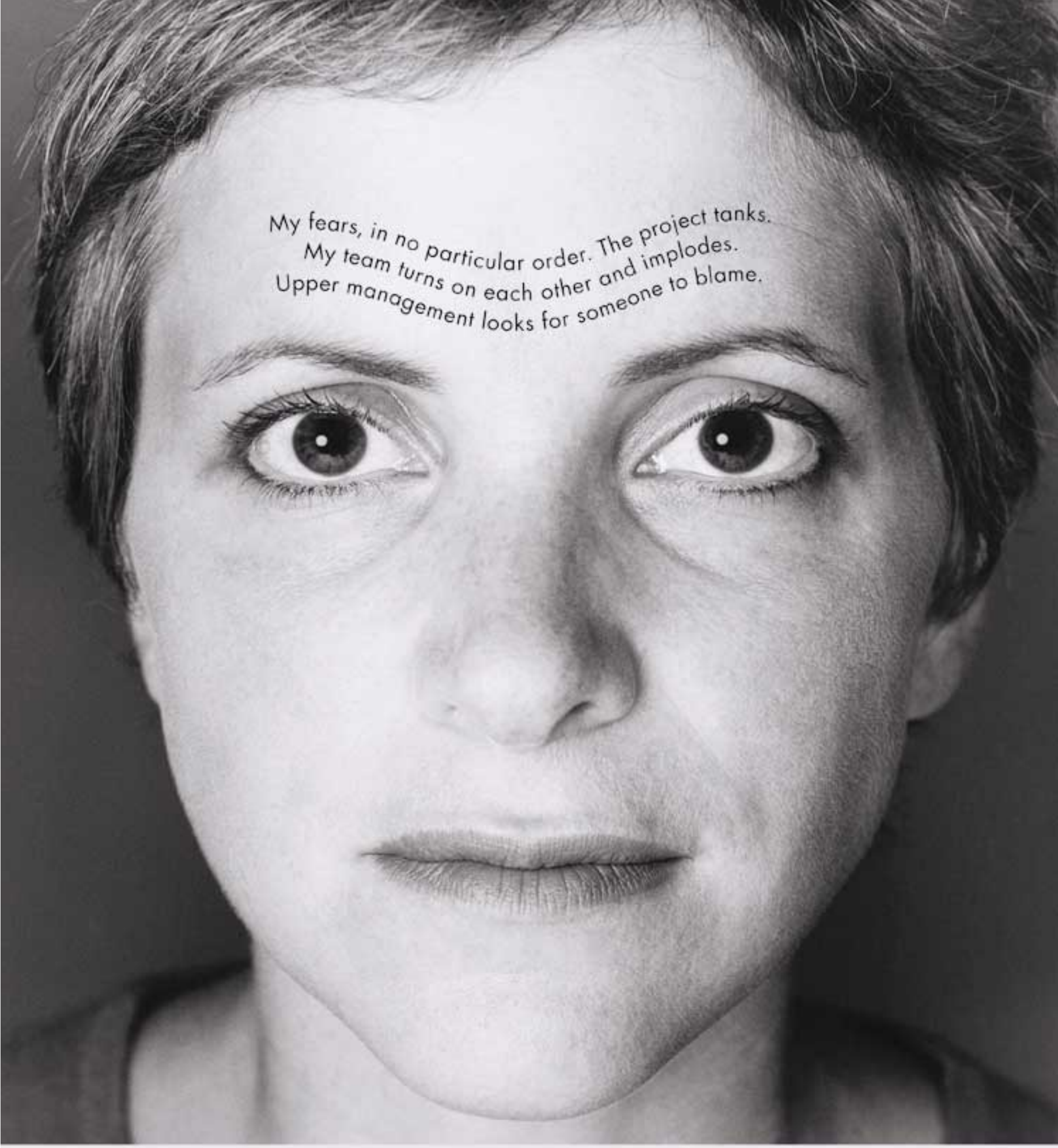
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ROGUE WAVE SOFTWARE

Up-and-Down Year for Java With Updates to J2EE, EJB

Platform advances can't hide contentiousness

BY CHRISTINA M. PURPI

A major revision to the Java 2 Enterprise Edition (J2EE) platform that included the much-anticipated Enterprise JavaBeans 2.0 specification dominated the news in Java development this past year. But disappointment over a lack of standards for Web services, an apparent decline in participation in the Java Community Process, and a continued consolidation of the application server market are issues that continue to plague Sun Microsystems Inc.

J2EE 1.3

The past year saw the final release of the J2EE 1.3 specification. Included in the 1.3 specification is the Java Connector Architecture (JCA) spec, the required Java Message Service API, stronger support for XML and the JSP framework and servlets. As of year's end, there were 37 J2EE licensees. A big part of this spec is the requirement for a JMS implementation, the two-phase commit portion of the JTS API used by EJBs. A JAXP parser with support for Simple API for XML (SAX) and the Document Object Model were added to 1.3, along with improvements to JavaServer Pages and servlets. Some developers are unhappy with the new spec, especially because it failed to provide a standard way to build and deploy Web services.

EJB 2.0

Some would say the biggest thing to happen to Java this year was the release of the EJB 2.0 spec. Beta users were unhappy with the proposed EJB spec, included in J2EE 1.3, according to Judith Lilienfeld, senior product manager at Sun. In response, increased interoperability between EJBs through container-managed persistence and message-driven beans was improved in the final release. Most significant in the 2.0 spec is the addition of the Internet Inter-ORB Protocol to J2EE. "Now you can have an EJB in one vendor's application server talking to an EJB in another vendor's application server," Lilienfeld said earlier in the year.

MICROSOFT VS. SUN

Sun and Microsoft Corp. finally came to an agreement concerning Microsoft's licensing of Java technologies. The original lawsuit, filed by Sun back in 1997, ordered that Microsoft stop shipping incompatible versions of Java. The companies settled in early 2001, and Microsoft agreed to pay Sun $20 million and accept Sun's termination of the 1996 licensing agreement. However, Microsoft received a license to distribute its existing versions of Java, but cannot update or add binaries for seven years.

JAVA COMMUNITY PROCESS

Back in June, George Paolini, Sun's Java evangelist, stepped down from his post as chairman at the JCP. He had guided Sun's process since 1999. Replacing him as chairman of the JCP is Rob Gingell, Sun's vice president and CTO for Java software, who will take over the majority of Paolini's responsibilities—with the exception of marketing and evangelizing.

SUN ONE

Sun revealed its own version of Web Services in February with its Open Network Environment (ONE), which combines its existing products, such as Forte, with e-commerce and messaging servers to generate services accessible over any device. SunOne embraces XML, SOAP, UDDI and WSDL. "With SunOne, we will take existing products and integrate them to provide an infrastructure to take Web services to the next logical step: smart Web services that will deploy the right content to the right device only," said Curtis Sasaki, Sun's director of technological advocacy.

Sun also released Project JXTA, an open-source initiative, in late April. The company felt the need for a grand unifying protocol designed specifically for peer-to-peer computing across heterogeneous networks. The project's goal is to allow collaborative and peer-to-peer computing that's independent of any underlying network transport protocols, according to Li Gong, Sun's director of engineering for Project JXTA, earlier this year. Although the initial JXTA applications are written in Java, the project's goals include creating a C implementation.

J2SE 1.4

Version 1.4 of Java 2 Standard Edition, the free version of J2EE, was released in May, and includes the Java API for XML as a core component. For the first time, J2SE includes support for Kerberos 5, with security being another enhancement. In addition, version 1.4 now supports assertion-based programming, as pioneered in the Eiffel language.

APPLICATION SERVER MARKET

A few of the major players in the Java world have made some big moves this past year. For example, Macromedia Inc. acquired Allaire Corp. for $360 million in an effort to gain a J2EE server platform to complement its development tools. Both Iona Technologies Inc. and SilverStream Software Inc. have changed their corporate strategy focus from application servers to the up-and-coming Web services markets. Iona went from CORBA and middleware to J2EE and its iPortal Application Server, and now, just recently has retooled itself again to include B-to-B with its XMLBus toolkit for Web services. SilverStream rebranded its application server and J2EE-compatible layered products to tout the eXtend name. New to eXtend Composer version 3.0 is interoperability with Web services, specifically Microsoft's .NET initiative. ■

News Briefs

COMPANIES

MKS Inc. intends to integrate its Source Integrity Enterprise Edition software configuration management product with **IBM Corp.**'s WebSphere Studio Application Developer and WebSphere Studio Site Developer. Integration between the products is expected sometime during the first quarter of this year . . . **Borland Software Corp.**'s hosted TeamSource Development Services Platform brings disparate teams of developers together over the Internet. It is also available in a self-hosted version for internal, behind-the-firewall implementations . . . **Cape Clear Software Inc.** is supporting **Oracle Corp.**'s 9i Application Server in the CapeStudio Web services development tool . . . **AltoWeb Inc.** has released its J2EE application and Web services platform for **IBM Corp.**'s WebSphere application server, DB2 and UDDI directory. Also, the company has reduced the price of the platform from $5,000 to $2,000 per developer license, while the cost of the runtime remains $15,000 per server . . . **Thought Inc.** has integrated its object-to-relational database mapping tools with **IBM Corp.**'s WebSphere 4.0 application server.

PRODUCTS

Sun Microsystems Inc. has a new **Web services module** for Forte for Java that adds SOAP and WSDL capabilities to the IDE. The module, available for free through the IDE's AutoUpdate feature (http://forte.sun.com/eap), also includes wizards for defining and binding SOAP-RPC interfaces to EJB methods, the Apache SOAP 2.2 runtime, automatic generation of XML documents that describe Web services via WSDL, and test clients . . . Serena Software Inc. this week will bring out version 3.1 of its **ChangeMan WCM** Web content management tool for more streamlined content editing and new support for the major Unix platforms and Oracle databases, according to the company. Security, workflow and administrative enhancements have been added . . . ClientSoft Inc. has introduced **ClientView Builder for Visual Basic**, a tool suite that allows developers to create graphical user interface clients by integrating IBM mainframe and AS/400 applications through Microsoft's Visual Basic 6.0 IDE . . . Command Prompt Inc. has released a PostgreSQL application server, **LXP version 0.8.0,** offering Linux developers a suite of services for the creation of dynamic, data-driven Web sites. It utilizes the proprietary LXP markup language and offers direct URI support for Java, PHP, C, C++, Python and Perl. LXP also includes an XML parser . . . Microsoft Corp. is expected to make its **Office XP Web Services Toolkit** available this month . . . MicroOLAP Technologies Inc. has released libraries of native VCL components for direct access to MySQL, PostgreSQL and Sybase ASA database servers. The components, **MySQLDAC**, **PostgresDAC** and **ASADAC**, provide access to the appropriate servers from within Borland's Delphi or C++ Builder applications without the need for BDE/ODBC on the client. Trial versions are available for free download at www.microolap.com . . . **Storm**, produced by Snowbound Software Corp., is a new server-side Java application designed to serve and transform documents over the Internet. Capable of running on any EJB 1.1-compliant application server, according to the company, Storm includes features for data manipulation, data conversion, high-resolution printing and automatic versioning.

PEOPLE

Persistence Software Inc. has appointed **Keith Zaky** as senior vice president of worldwide field operations . . . TogetherSoft Corp. announced the appointment of **Donald V. Fluken** as its new COO. Fluken originally served as TogetherSoft's CFO, then as vice president international and acting COO . . . Softwrap has named **Richard Wienburg** as head of the company's quality assurance division. Softwrap creates virtual shrink-wrap for applications to be securely distributed . . . **Robert Douglas** has joined the MKS Inc. board of directors. Douglas is executive vice president of North American sales and operations for Pivotal Corp. ■

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The Evolution Of Internet Standards

BY ALAN ZEICHICK

While nothing like XML or SOAP exploded onto the scene in 2001, various standards bodies and vendor consortia succeeded in advancing specifications…one step at a time.

Arguably the most interesting advances, at least for enterprise Web developers, are those that came from the World Wide Web Consortium. The W3C's most successful release was the Scalable Vector Graphics spec, which provides a means for the distribution of non-bitmapped graphics. These are described according to lines, curves and angles rather than *x-y* coordinates. With various versions of the SVG targeting both rich clients and mobile devices, expect this spec to be increasingly important in the next year.

During the year, the organization made headway on XPath, a key specification that will help applications work with complex XML documents; and VoiceXML, which aims to help use XML to deliver natural and synthesized voice, along with touch-tone signals. This will be important for unified message delivery. It also improved DOM, the Document Object Model, and CSS, Cascading Style Sheets.

The Extensible Stylesheet Language, or XSL, finally became an official W3C Recommendation, and progress was made on improvements to SOAP, the Simple Object Access Protocol, and XHTML, the Extensible Hypertext Markup Language. Also core was work on XML Schema, which standardizes a way to express XML vocabularies.

The W3C, of course, doesn't have a monopoly on specifications. Object Management Group Inc., which is closer to a vendor consortium than a standards body, requested member (vendor) input into the next-generation Unified Modeling Language; by the end of the year, OMG's board was poring over many requests for specific features in UML 2.0.

The group achieved good reviews for its Model Driven Architecture, which seeks to express a company's business processes in a platform-independent manner. Only a few vendors, however, had released MDA-based tools, and it's too early to judge its impact.

It's also too early to see Microsoft Corp.'s success in "standardizing" its new C# programming language and the Common Language Infrastructure (CLI), a subset of its .NET Framework and Common Language Runtime (CLR). In 2000, Microsoft submitted these specs to ECMA, a European vendor consortium with little prior experience with programming-language standards. In fact, ECMA accurately calls itself an "international industry association," but Microsoft claims that it's a "vendor-neutral international standards organization."

This move was largely seen as a poke in the eye to Sun Microsystems Inc., which had offered to submit Java to a standards body, but then pulled back in favor of its own Java Community Process. In mid-December, ECMA ratified C# and the CLI, a step Microsoft claims will lead to fast-track approval of those specifications by ISO, the International Standards Organization, which is a real standards body. ■

SilkPerformer V Makes Predecessors Obsolete

Segue: Load testing without verification is a waste of time

BY EDWARD J. CORREIA

It's one thing to release an updated product that outperforms the competition—or its predecessors. It's another to claim that unless they're using the latest version of your tools, developers have been wasting their time.

Yet that was what Basil Harris, vice president of marketing for Segue Software Inc., said about SilkPerformer V, the latest version of the company's load-testing and simulation tool that now features the ability to validate application and Web page data on systems under test. "We think that unless you're verifying content, you're wasting your time and you might as well not do load testing," he said, adding that having a Web site that has stopped responding to user input due to heavy load is "preferable to one that still works but gives out bad data."

Harris later clarified his statement. He explained that prior to version V, stress testers could not see "whether there were errors returned by the applications" and could therefore not determine if the data being generated was valid. SilkPerformer, he added, allows application developers to simulate the effects of hundreds of thousands of users accessing applications, and returns "highly accurate system resource usage" data that developers and system administrators can analyze to determine if a system is capable of handling its expected usage.

SilkPerformer V, Harris said, not only lets developers identify errors through a visual interface, but "whenever there is unexpected content, it gets put into a log file," permitting testers to pinpoint exactly where and when the error occurred. "This is a huge [advance] for developer productivity…we think we've taken a significant step beyond Mercury's LoadRunner," which performs content validation through scripting files and error logs.

Segue (www.segue.com) also has modified its pricing policy for SilkPerformer V. As before, companies may purchase a perpetual license for $50,000 for unlimited virtual users; annual maintenance costs 18 percent of the original purchase price. Under new pricing, a six-month version of the application is available for $18,000 with a maximum of 100 virtual users per test and up to 5,000 total. The software runs on Windows NT/2000 development hosts and simulates a variety of systems, including mainframe, Unix and Windows servers. ■

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A Tamer Oracle Goes on the Defensive

Weaker sales, executive defections take away some swagger at subdued conference

BY ANDREW BINSTOCK

SAN FRANCISCO — While widely deployed, **Oracle Corp.**'s products have never been able to muster the wild enthusiasm of users and developers the way Java, Linux and Apple have. So, when Oracle stages its annual trade show, Oracle OpenWorld, the feel on the floor is not so much a love fest as a hearing of the company's direction and an inspection of new products.

The most recent OpenWorld, held the first week of December in San Francisco, was very much a sober affair, in part because of lower attendance (due presumably to post-Sept. 11 travel concerns and the economic contraction) and in part because Oracle itself had little to announce.

On the latter point, there was an additional factor at play: Oracle was on the defensive—weak sales during the last quarter and a string of departures by senior executives restrained the usual swagger of Larry Ellison and company. Ellison's keynote, in fact, was tame and explanatory and lacked his expected bravado.

The rollout of the Oracle9i database earlier this year forced the application server to take central stage at OpenWorld, with emphasis on the 2.0 release of 9iAS, due to ship early in 2002.

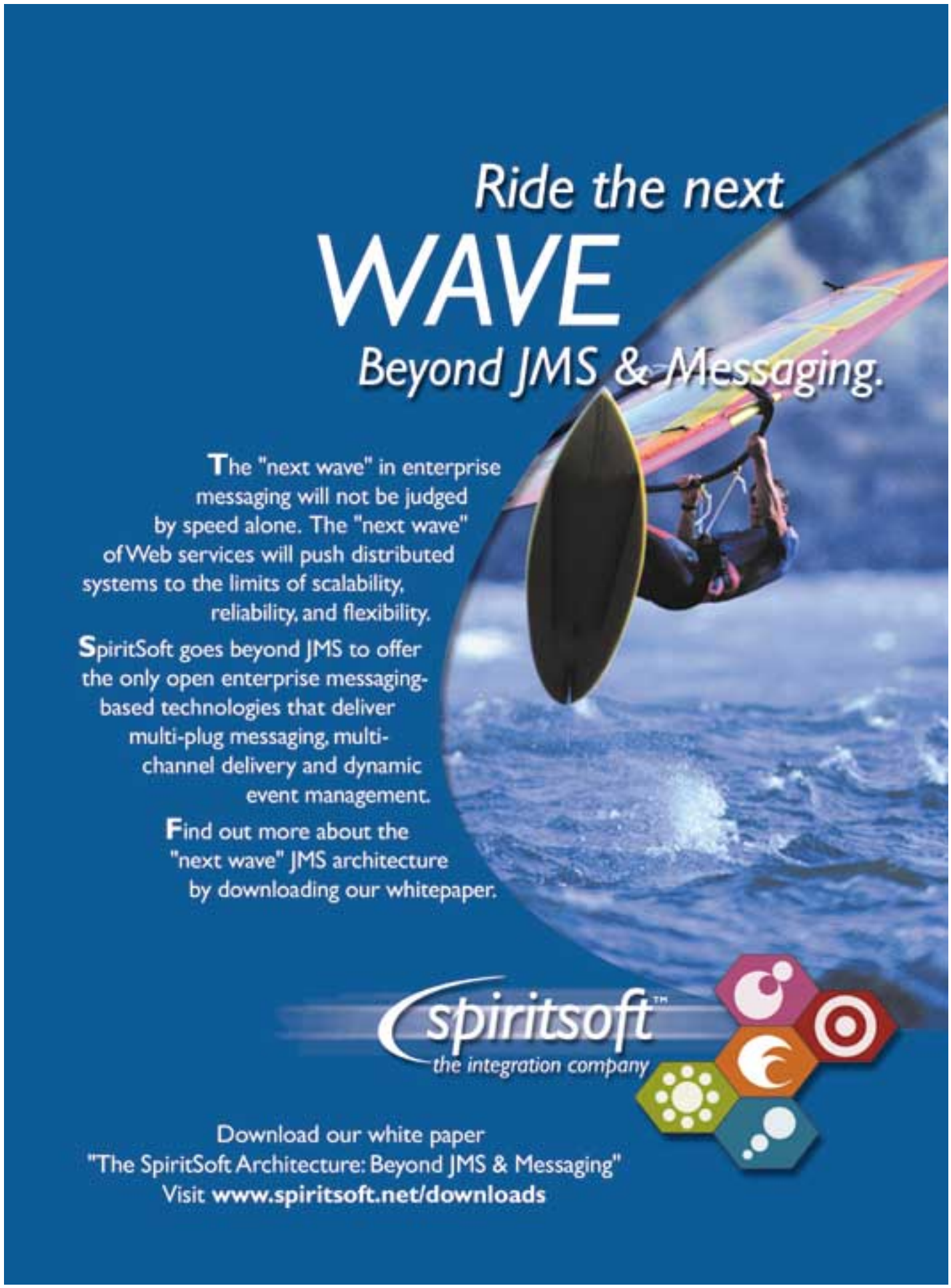
The new version will be compliant with the J2EE 1.3 standard and will provide complete support for Web services protocols and interoperability with Microsoft's .NET initiative. 9iAS will support clustering, single sign-on and better directory integration through LDAP. Personalized interfaces to 9iAS will enable unified messaging. And tools for wireless support will be included. In addition, interfaces to back-end packages such as Baan, Vantive and Siebel have been added to the existing support for SAP and PeopleSoft.

But the aspect that got the most play from Oracle was 9iAS' clustering capability. Since the 9i database was released at midyear, Oracle has single-mindedly promoted its clustering support to counter IBM Corp.'s own success in this area. Pricing for the new version of 9iAS is expected to start at $10,000 per processor.

As of the end of the third quarter, according to Gartner Inc.'s Dataquest, Oracle9iAS and Hewlett-Packard Co.'s Bluestone Java application servers were tied for fourth place (behind BEA Systems Inc., IBM, and iPlanet) with 4 percent market share. In view of HP's decision to rename its app server (HP-AS) and offer it at no cost, Oracle needs a strong release to assure continued growth in this market.

Regarding Java, Oracle

► continued on page 9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ORACLE

◂ continued from page 8

loudly touted its JDeveloper product suite, a development environment that facilitates design of applications that employ Java, XML and SQL. So were many Oracle partners:

Compuware Corp. (www.compuware.com) announced support for 9iAS in its OptimalJ development environment for constructing J2EE applications, and in its DevPartner Java Edition, which tests performance, code coverage and reliability of Java applications. Compuware also announced a new debugging capability in DevPartnerDB for Oracle version 4.0, which enables developers to debug PL/SQL and Java stored procedures for Oracle's 9i database.

Computer Associates International Inc.'s Cool:Joe 2.1 product, which automates development of J2EE e-business applications, will shortly support 9iAS, according to the company's announcement at the show. CA also unveiled 9iAS support in its CleverPath Portal software.

Cape Clear Software Inc. (www.capeclear.com) announced that its Web services tools will work with 9iAS imminently. Due to the likely expansion of 9iAS' market position in view of Oracle's aggressive promotion of the product, readers should expect that all major vendors of Web services will shortly be announcing support for 9iAS.

Quest Software Inc. (www.quest.com) announced that its products SharePlex (delivering high availability), Foglight (monitoring) and Spotlight (diagnosis) will all shortly support 9iAS. In addition, Quest unveiled its Knowledge Xpert series of reference materials for Oracle (as well as DB2 and SQL Server). Knowledge Xpert is a technical reference oriented toward DBAs and available online. Pricing starts at $295 per seat. The Xpert product complements the company's existing reference materials in SQL Navigator.

Hardware makers had a distinctly software look at OpenWorld. Michael Capellas, CEO of **Compaq Corp.**, delivered a keynote speech that focused on multiplatform deployments of databases and the use of clusters. At the show, Compaq announced the Janu-

ary release of a new version of its Database Utility. The forthcoming release enables the dynamic resizing of 9i database clusters, or what Oracle calls its "Real Application clusters," a dig aimed specifically at IBM's clusters, which run faster but less securely than Oracle's implementation.

Storage manufacturer **Network Appliance Inc.** (www.netapp.com) announced consulting services for installing and configuring Oracle databases on network-attached storage (NAS); and it was demonstrating its implementation of Direct Access File System (DAFS), which is a high-performance file-access protocol designed specifically to use InfiniBand acting as a memory-to-memory interconnect between application servers and shared file storage.

What is clear from these announcements is that Oracle had little new to say about its flagship database products. Besides trotting out the clusters story once more to combat IBM, only Ellison's re-explanation of his proposal for a national identity database (in view of the September 11 events) brought the DBMS to anyone's mind.

This show was about 9iAS, plain and simple. ▮

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Not Much in Way of New Construction

Renovations for new Java, .NET environments dominate software tools market

BY DAVID RUBINSTEIN

Major releases in the Java and Microsoft domains dominated the latter part of 2001 in the development tools market, which for the most part experienced a quiet year in terms of new products, reflecting both a maturity of the tool sets and an immaturity of the latest deployment platforms.

In the Java space, vendors tried to tie their development tools more closely to their application servers, and to a lesser extent, their own relational databases. IBM Corp. announced that it would phase out the popular Visual Age for Java IDE and offered a migration path to a new WebSphere Studio Application Developer suite, which will replace VisualAge for Java by 2003. The new suite is an open-source endeavor under IBM's Eclipse Project, which is grabbing headlines as a competitor to Sun Microsystems Inc.'s similar NetBeans initiative. Meanwhile, Oracle Corp. this year revamped its jDeveloper IDE, adding UML diagrams and a new Java Virtual Machine as it tries to win developers to its J2EE-compliant 9iAS application server, which has gained significant market share this year.

The news out of Microsoft Corp. was dominated by the final beta release of the Visual Studio.NET development environment, which includes Visual Basic.NET. This could create problems for the legions of Visual Basic developers, though, as code written in Visual Basic 6.0, released this year on the product's 10th anniversary, will have to be rewritten for .NET.

Visual Studio.NET will include Enterprise Architect, for modeling applications and databases, and Enterprise Developer, which lets programmers use those models to create applications. Microsoft also announced a Visual J# syntax tool to lure Java developers to the .NET platform. Visual J# is the first release under Microsoft's Java User Migration Path strategy. Analysts, though, fear the product could backfire as it could create confusion regarding the adoption of C#, which is Microsoft's answer to Java, and believe J# will largely be ignored by Java developers.

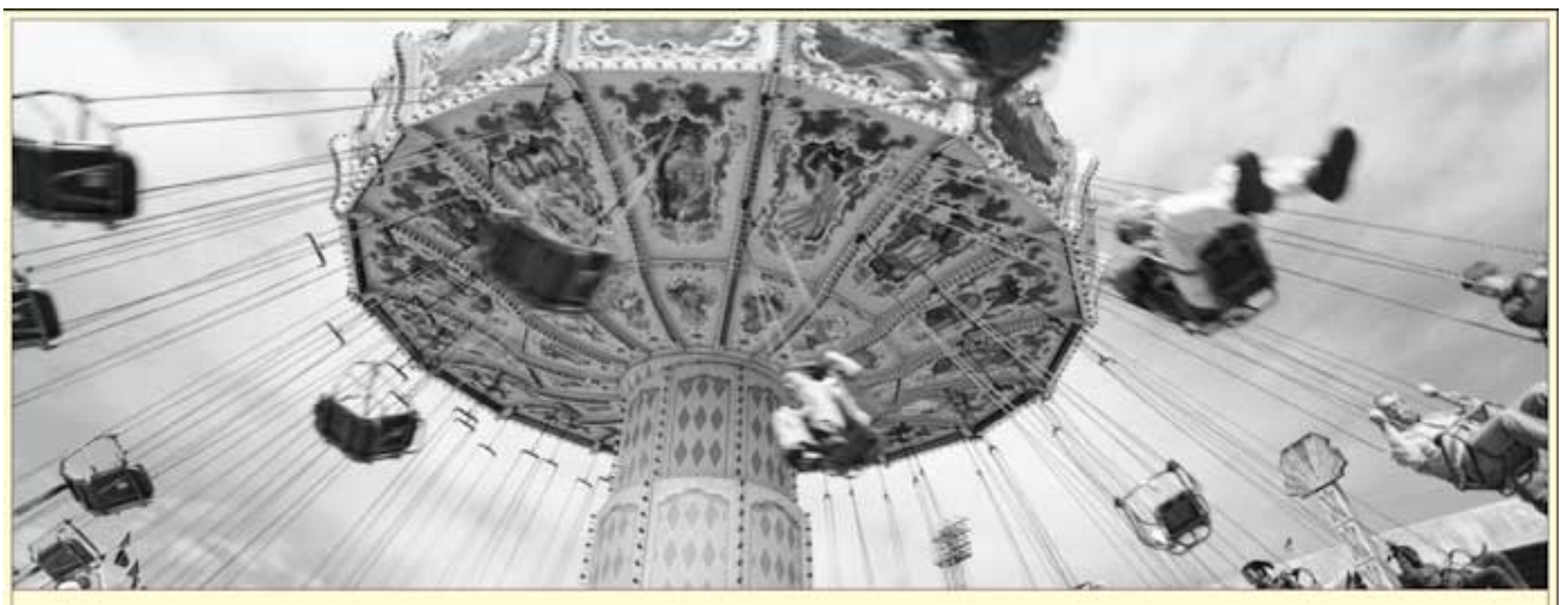
Major releases from Borland Software Corp. took center stage during the early part of the past year. In early February, Borland brought to market its long-awaited Kylix RAD environment that was expected to bring legitimacy to Linux as a bona fide deployment platform for enterprise-class applications. Kylix 2.0, which was released in November, added support for XML-based Web services and the ability to share code and project files with Delphi 6.0, which Borland released in May. The integration is designed to create portability between Linux and Windows applications, according to Borland.

Meanwhile, Linux got another boost in September when Intel Corp. released C++ and FORTRAN compilers for Itanium systems running the fast-growing open-source operating system. Intel touted a 40 percent performance increase in applications compiled with its tools as opposed to those compiled with available open-source tools.

VA Linux Systems Inc., which entered into the industry's consciousness with a $238 million IPO late in 1999, crashed in the hardware space in which it was grounded and was forced to try to make a go of it as a software vendor under the name VA Software Corp. VA Linux, which sold servers running the Linux operating system, is now marketing its SourceForge collaborative software development environment. The company, which could not compete against IBM Corp. and other hardware vendors that adopted Linux, now must find a way to turn a profit selling a product based on available open-source technology.

Another release of Rational Software Corp.'s Rational Suite—the seventh revision in its two-year history—featured a project management tool called ProjectConsole that lets developers create a project Web site, and includes metrics for quantifying the progress of that project.

Otherwise, the year was characterized by dot-one and dot-two releases, many of which added features to help developers build Web services, use UML, interoperate with XML, and otherwise support new coding specifications. While those upgrades are surely important to those tools' existing users, these minor tweaks provided little incentive for new customers to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CollabNet Improves 'Hosting' Software

SourceCast brings open-source concepts to enterprise development

BY DAVID RUBINSTEIN

For companies looking to create open-source projects under their own brand, CollabNet recently released version 1.2 of its SourceCast hosted development software, with improved project and category administration and more flexible file-sharing capability.

SourceCast 1.2, according to director of product management Robert Clawson, takes the experience that CollabNet gained hosting projects in the open-source community and brings it to enterprise development shops. "We're using that Web-based Internet delivery environment to get work done across enterprise teams," Clawson said.

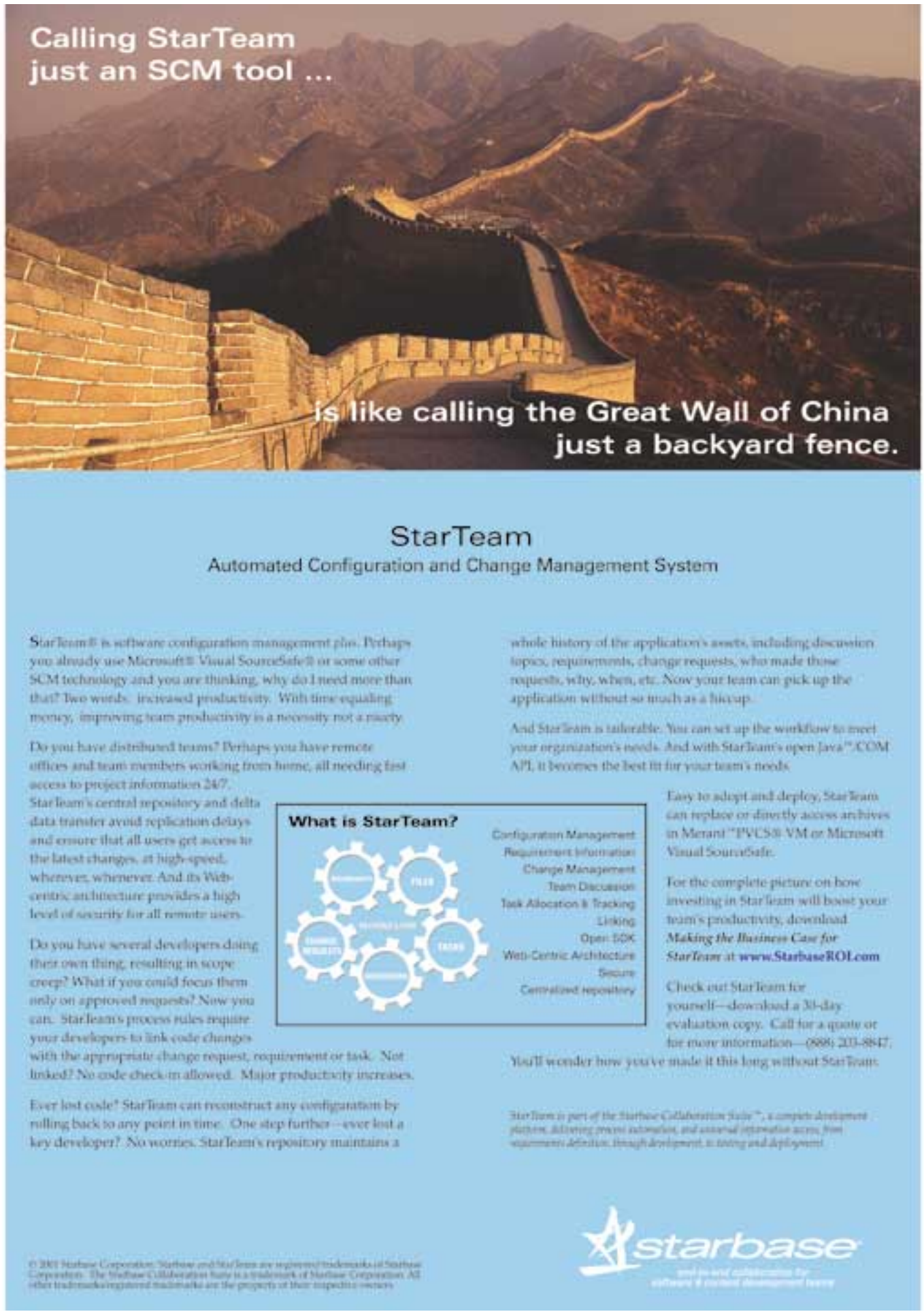
Companies, Clawson explained, can't just set up a Web site, send out some e-mail alerts and have a community of developers at its disposal. There needs to be promotion of the site, active management and security. While Clawson admitted to finding resistance to hosted development projects because of security issues, he claimed CollabNet has met customers' needs "to the point where they use our security standards on their own sites."

CollabNet (www.collab.net) hopes to find a market among companies that need to create developer communities but that do not need or want to be identified with such open-source hosted sites as Tigris.org or Openadapter.org. "The primary driver for open-source usage is to get identified with a project," he said. "But if you have your own technology, you want to bring people to your site to get involved with development and create a community under your brand."

Clawson said the current economic environment will give a boost to collaborative development. "Open-source methodologies were fine when the economy was cranking at full steam," he said. "But as it pulled back, companies were forced to look at their internal resources, at how to use tools to make the teams work better together."

SourceCast, he claimed, allows project managers to create a structure that can be set up by either developer functions or corporate organization. The administration can be as rich or minimal as needed, he said, as managers can either simply find a name and description of a team member's piece of the project, or drill down to such things as issue tracking. Projects can be set up by category, and the categories can later be associated with other projects, he added, with permission to specific project areas based on a team member's role in the project.

SourceCast, when used to create a site for third-party, open-source developers, is priced at between $14,000 and $24,000 per month, based on the size and complexity of the site, Clawson said. When used in an internal enterprise development network, the cost is $175 per user per month. ▮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DataMirror DB/XML Brings EDI Into the Fold

BY CHRISTINA M. PURPI

DataMirror Corp. has released version 2.5 of its DB/XML Transform document creator, which now allows developers to integrate existing EDI infrastructures with XML-based technologies.

The company also has added XML capability to its Transformation database server.

DB/XML Transform is a real-time database-to-complex-XML-document creator that pushes XML documents into application servers, message queues or B-to-B exchanges in a programming-free environment, according to Benjamin Zhang, development manager for DB/XML-Transform. "In short, it manages data the XML way." DB/XML Transform now allows businesses to transform EDI (Electronic Data Interchange) messages to XML, databases and flat file formats.

"The benefit of integrating EDI with XML is that it enables and empowers organizations that have made an investment in EDI to extend their reach into the new economy with other business partners that are using XML, and vice versa," claimed John Vandermay, vice president of business development at DataMirror (www.datamirror.com).

Another new feature to DB/XML Transform is support for RosettaNet, and according to Zhang, it also supports ebXML. "RosettaNet is following and walking alongside ebXML. The future of RosettaNet will follow ebXML for some business processes."

The company also has recently released a new version of its Transformation Server, which converts transactional data, to include XML support. "Without any programming, customers can, in real time, create XML documents from transactions on their applications or legacy sources as they are created through their applications," said Vandermay.

According to Zhang, there are no competitors to the Transformation Server for XML because it uses real-time event capture on operation source databases, which captures adds, changes or deletes on databases at the same moment that the adds, changes or deletes occur.

Pricing for both DB/XML Transform and the Transformation Server for XML are based on the size of the server they run on, with a base price of $7,000 for a single Windows NT-based server. Both products are available now. ■

Phaos Bars the Door to XML Applications

BY DAVID RUBINSTEIN

Imagine using a 15-cylinder lock and a deadbolt to keep people out of your house, only to realize after you've been burglarized that the door is made out of cardboard.

Security company Phaos Technology Corp. believes too many developers think about security as an afterthought, leaving too many points of access into the application.

"If you have any inkling that your application will have security issues, you must deal with them at the specification stage," said Ari Kermaier, senior engineer at Phaos (www.phaos.com). "You have to think about security when you're writing the application. If you tack on encryption or authentication at the end, you'll leave holes."

To that end, Phaos released in mid-December its new XML Toolkit 1.0, which includes implementations of such emerging security standards as XML DSIG, the digital signature and verification specification that is a proposed draft at the World Wide Web Consortium; XML Encryption for encrypting and decrypting XML messages; and XKMS, the XML Key Management Specification that bridges legacy Public Key Infrastructure security to XML documents for validation on client systems, Kermaier explained. XKMS is an important protocol, he said, because digital signatures and encryption rely on having keys to verify them.

The toolkit, which sells for $3,000 per server, allows developers to wrap Online Certificate Status Protocol (OCSP) messages in XML, which can then be sent to the requester with the OCSP on the XML document. The requesting party then can query an OCS server to learn whether the certificate in question still is valid.

As for questions surrounding security leaks in Microsoft's Outlook and Outlook Express e-mail clients, Kermaier said, "Microsoft is integrating security and encryption in its products, but they are not doing airtight security in their applications. It's easy to forget details that nullify the whole [development] effort." ■

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TopLink Gets EJB 2.0 Support, More Mapping Types

BY DAVID RUBINSTEIN

Support for the EJB 2.0 specification and the addition of mapping types highlight the new features of TopLink 4.0, an object-to-relational database mapping tool update released last week by WebGain Inc.

According to WebGain vice president of engineering Dennis Leung, TopLink goes beyond traditional O-R mapping tools by providing functionality at runtime, such as querying, caching and the ability to accept concurrent users.

WebGain (www.webgain.com) expects to see growth in this area primarily due to the fact that object databases have yet to grab a large share of the database market, Leung said. "Customers have huge investments in relational databases. Companies won't walk away from their investments not only in the technology but in their data," he said. "We're seeing a growing market. We used to have to explain the problem and then our solution, but now people understand O-R impedance mismatch and what it costs them."

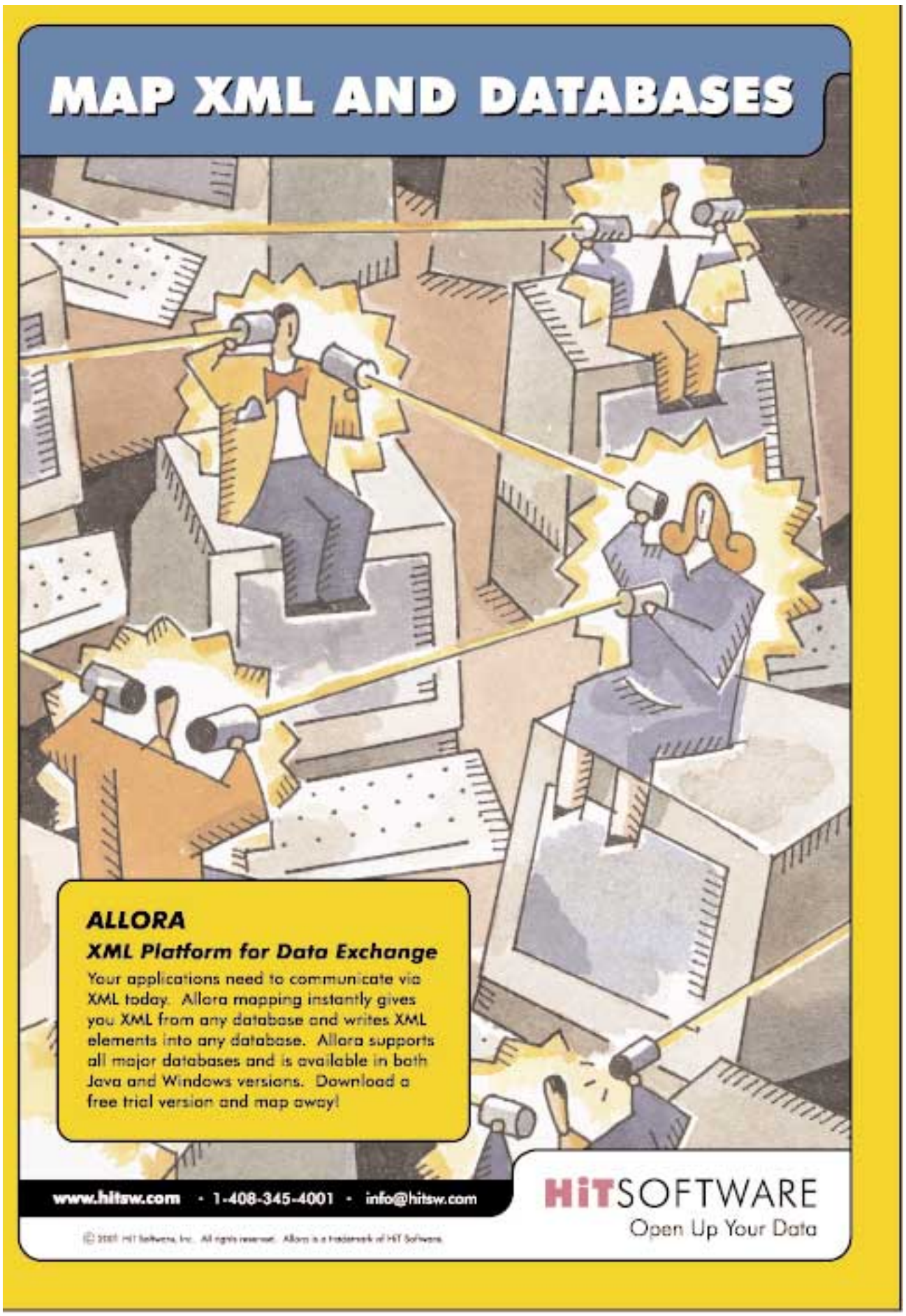
By working with the EJB 2.0 specification, TopLink makes EJBQL available to non-EJB applications, Leung said. For developers creating JavaServer Pages and servlets, this capability gives them the option to more easily port to EJB architectures later on, he explained. For now, the tool's EJB 2.0 support works only with BEA Systems Inc.'s WebLogic and Hewlett-Packard Co.'s HP-AS servers, as Leung believes they are the only two on the market now that have EJB 2.0 implementations.

The new mapping types bring the total number to 18 that TopLink now offers, Leung said. "This provides flexibility because of the variety of architectures we allow customers to use," he explained. TopLink, which WebGain got with the acquisition of The Object People Inc. in July 2000, will run with any Java application server and any JDBC-compliant database, he said.

Other new features include the ability to configure log-in parameters through XML, so there is no need to recompile code when changes occur; and enhanced facilities to monitor applications at runtime.

TopLink is sold as a visual mapping workbench, which allows developers to define mapping via a graphical interface; and a foundation library, which maps information used at runtime. The GUI workbench is licensed at $2,995 per developer, while the developer version of the foundation library costs $1,995 per developer. Deploying TopLink across multiple sites costs $6,995 per processor.

TopLink 4.0 was to be available at the end of December and is compatible with the WebGain Studio development tool suite released this past summer. WebGain Studio ships with TopLink version 3.6, but will get the updated version for its next release, Leung said. He could not provide a timetable for the next release of the Studio suite. ■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Accenture Markets Its Model Methods

BY EDWARD J. CORREIA

In an effort to provide customers with a coherent development methodology, software consultancy Accenture has created a J2EE development framework that the company claims provides Java developers with a means to build and manage their enterprise applications more easily and with less duplication of effort.

According to Kevin Pollari, an Accenture partner in charge of application development, the General and Reusable Netcentric Delivery Solution (GRNDS) framework provides "reusable components, like exception handling and logging, hooks for integrating with messaging components, and provides templates and an overall framework for a development team" to add their own business logic.

Pollari said that GRNDS does not adhere to any of the published development methods, but instead, "follows best practices of our lessons learned from real experiences with clients." He maintained that unlike frameworks that rely on theory, "ours stems from real client work. We've learned over the years that developing this stuff in an ivory tower doesn't work very well for a variety of reasons."

One such reason is the inability to scale, he said, and cited where Accenture's framework differs from the one offered by Sun Microsystems Inc. "One approach we avoid is entity beans, which don't scale or perform well" because they "proliferate EJBs like crazy without a valid reason."

Accenture (www.accenture.com) offers the GRNDS framework for free to qualified customers of its consulting services. Pollari said that while the software has not gone through a formal certification process, it has been internally tested on WebLogic and WebSphere servers and should work with any J2EE-certified server. ■

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Altova Launches XML Spy Suite

BY DAVID RUBINSTEIN

Toolkit vendor Altova Inc. used the XML Conference and Expo in Orlando, Fla., last month to launch an updated suite of tools designed to ease the development of XML applications.

XML Spy 4.2 Suite consists of the company's XML Spy integrated development environment, its XSLT Designer for the generation of style sheets, and XML Document Editor, which lets developers build XML content by using a word-processor-like application.

The major enhancements to the suite include support for SOAP, Microsoft's XML parser (MSXML4) and Oracle's XDB schema extensions. The SOAP support provides for the interpretation of Web Services Description Language documents and the creation, submission and viewing of SOAP requests and responses. Pricing ranges from $399 for a single user to $15,990 for 50 users, according to the company's Web site (www.xmlspy.com), and the suite is available for download and purchase. ■

Java Technology: Big on Servers

BZ Research survey shows most enterprise shops developing Java apps

BY ALAN ZEICHICK

More than half of all enterprise development managers surveyed in a recent poll say they're developing Java applications today—and another 27 percent say that they intend to do so over the next year.

Those are the top-line findings from a Java study conducted in November 2001 by BZ Research, like SD Times a subsidiary of BZ Media LLC. The study, which was submitted to a random sampling of SD Times' qualified readers, reported that 52 percent are currently developing for Java. Of those who are not yet developing Java applications, 15 percent plan to do so within the next six months, and nearly 13 percent expect to begin building Java applications in the next six to 12 months. Nearly 20 percent reported that they have no intentions of building Java applications.

Sun Microsystems Inc.'s iPlanet J2EE application server is only the fifth most popular deployment platform. Contrary to many analyst reports, which show that BEA Systems Inc.'s WebLogic app server is king of the hill, BZ Research's numbers gave top place to IBM Corp.'s WebSphere application server, with nearly a third of respondents saying they are currently using WebSphere. (This percentage represents the share within those respondents who are either already using Java or plan to do so within the next year.) The No. 2 spot fell to Oracle Corp.'s Oracle9iAS, which has achieved strong mind share and market share since its launch. BEA's WebLogic showed a strong third, followed by Macromedia Inc.'s JRun, iPlanet and Borland Software Corp.'s app server.

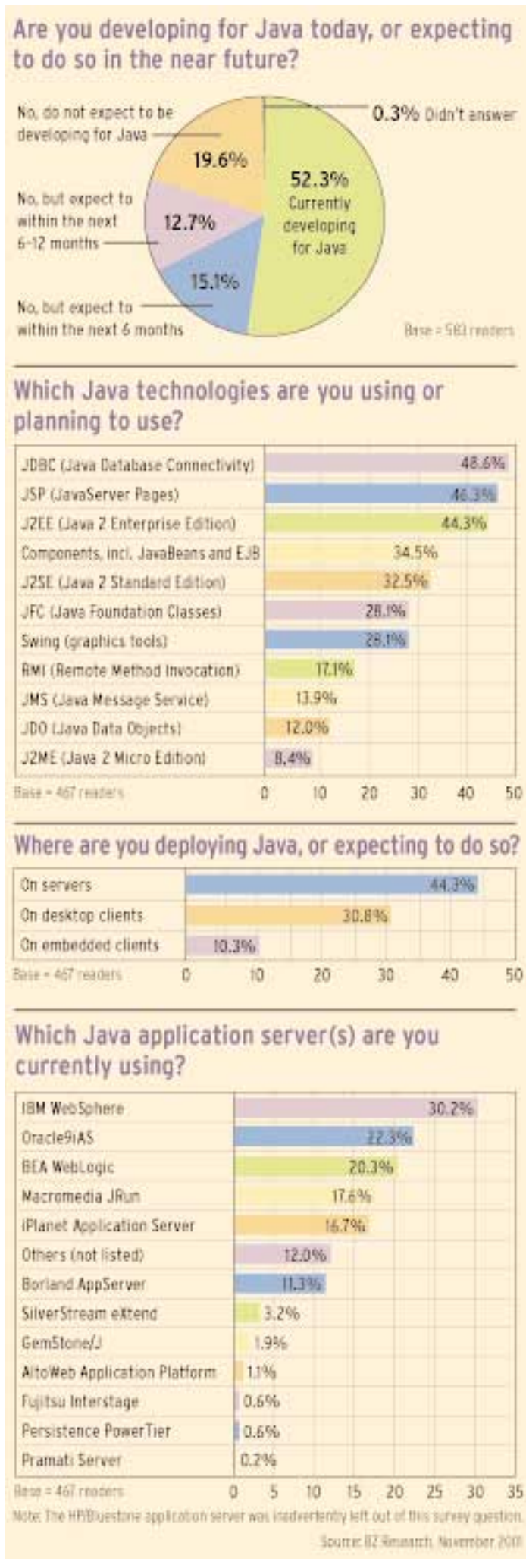
The strong IBM and Oracle results may also be attributed to the demographics of SD Times' subscriber base, which mainly consists of large enterprises—the markets that those two major companies have been traditionally targeting with their software offerings. The strong showing of JRun was more surprising.

Due to a programming oversight, the BZ Research study did not specifically ask about Hewlett-Packard Co.'s Bluestone application server, now renamed HP-AS.

The study also showed that Java overwhelmingly was seen as a server-side technology. Of those respondents who are using or intend to use Java, 44 percent are deploying on servers, roughly 30 percent on desktop clients and 10 percent on embedded clients.

Those figures are borne out by the study's question regarding specific Java technologies: Of those respondents using or planning to use Java, 44 percent will be using J2EE (Java 2 Enterprise Edition), about 32 percent will be using J2SE (Java 2 Standard Edition), and just over 8 percent will be using J2ME (Java 2 Micro Edition). The extra use of J2SE would imply that it is being used in some server or embedded applications, as well as on the desktop.

The most popular Java technologies were JDBC (Java Database Connectivity) APIs and JSP, the JavaServer Pages—both of which are primarily used in server applications. The newer JMS (Java Message Service) and JDO (Java Data Objects) proved less popular among the respondents. ▮


Are you developing for Java today, or expecting to do so in the near future?
No, do not expect to be developing for Java
19.6%
0.3% Didn't answer
52.3% Currently developing for Java
No, but expect to within the next 6-12 months
12.7%
15.1%
No, but expect to within the next 6 months
Base = 581 readers
Which Java technologies are you using or planning to use?
JDBC (Java Database Connectivity) 48.6%
JSP (JavaServer Pages) 46.3%
J2EE (Java 2 Enterprise Edition) 44.3%
Components, incl. JavaBeans and EJB 34.5%
J2SE (Java 2 Standard Edition) 32.5%
JFC (Java Foundation Classes) 28.1%
Swing (graphics tools) 28.1%
RMI (Remote Method Invocation) 17.1%
JMS (Java Message Service) 13.9%
JDO (Java Data Objects) 12.0%
J2ME (Java 2 Micro Edition) 8.4%
Base = 467 readers
0 10 20 30 40 50
Where are you deploying Java, or expecting to do so?
On servers 44.3%
On desktop clients 30.8%
On embedded clients 10.3%
Base = 467 readers
0 10 20 30 40 50
Which Java application server(s) are you currently using?
IBM WebSphere 30.2%
Oracle9iAS 22.3%
BEA WebLogic 20.3%
Macromedia JRun 17.6%
iPlanet Application Server 16.7%
Others (not listed) 12.0%
Borland AppServer 11.3%
SilverStream eXtend 3.2%
GemStone/J 1.9%
AltoWeb Application Platform 1.1%
Fujitsu Interstage 0.6%
Persistence PowerTier 0.6%
Pramati Server 0.2%
Base = 467 readers
0 5 10 15 20 25 30 35
Note: The HP/Bluestone application server was inadvertently left out of this survey question.
Source: BZ Research, November 2001

New York Ready to Host LinuxWorld

Conference to feature sessions on Web services, enterprise

CONFERENCE: Jan. 29–Feb. 1
Jacob K. Javits Center, New York

CONFERENCE HOURS:
Wednesday, 11 a.m.–7:30 p.m.
Thursday, 11 a.m.–7:30 p.m.
Friday, 10 a.m.–2:15 p.m.

EXHIBIT HOURS:
Wednesday, 10:30 a.m.–6 p.m.
Thursday, 10:30 a.m.–6 p.m.
Friday, 10:30 a.m.–4 p.m.

KEYNOTE SPEAKERS:
Wednesday, 9:30 a.m.–10:30 a.m., Carly Fiorina, chairman and CEO, Hewlett-Packard Co.

Wednesday, 1 p.m.–2 p.m., William M. Zeitler, senior vice president and group executive, Server Group, IBM Corp.

Thursday, 9:30 a.m.–10:30 a.m., Sanjay Kumar, president and CEO, Computer Associates International Inc., "Linux in the Enterprise: Making It Happen."

www.linuxworldexpo.com

BY CHRISTINA M. PURPI

In the aftermath of Sept. 11, New York City Mayor Rudolph Giuliani is asking visitors to "spend your money here and stimulate the economy." So if you're in town this month for the third annual LinuxWorld Conference & Expo, and you're looking to relax after full days of sessions, keynotes and chatting with exhibitors, see if you can catch a show, grab a bite and take in some of the sights.

LinuxWorld is scheduled to take place from Jan. 29 through Feb. 1 at the Jacob K. Javits Center, and will offer 14 half-day tutorials, approximately 50 exhibitors, and sessions such as "Open Source Web Services—The Next Internet Battleground" and "Linux as the Platform for Enterprise-Wide Management."

The four-day conference will feature keynote speakers such as Carly Fiorina, chairman and CEO of Hewlett-Packard Co., and William M. Zeitler, senior vice president and group executive of the Server Group at IBM Corp. Sanjay Kumar, president and CEO of Computer Associates International Inc., also will address the conference.

The .ORG pavilion and the Golden Penguin Bowl will again make their appearances, along with a "feature presentation" hosted by Scott McNeil, executive director of The Free Standards Group, who will address "Building the Foundation for World Domination: Free Standards for Global Markets & Individual Empowerment." ▮

2001 HIGHLIGHTS

◂ continued from page 1

Apple Computer Inc.'s release of Mac OS X, a Unix-based replacement for its 15-year-old proprietary operating system, was received with interest by many developers. It's difficult to predict whether Mac OS X will help the Macintosh gain in the long term against competing platforms, but at least for now, having a true multithreading, multitasking operating system allows Apple to stay in the game.

For developers, there were few innovative new tools released in 2001. Most of the attention seemed to be focused on repackaging stand-alone tools into complete suites, and on turning integrated development environments into frameworks that could support plug-ins. That's certainly the approach taken by Microsoft's Visual Studio.NET and Sun's NetBeans project, and most recently by IBM's Eclipse Project, widely viewed as a direct competitor to NetBeans. Borland Software Corp., too, was focused on suites, and also finally delivered its Kylix IDE for Linux.

Where the big players did upgrade their tools, it was often to tie those tools more closely to their own databases and platforms. IBM's VisualAge for Java is morphing into a set of tools fine-tuned for its WebSphere app server. Oracle Corp.'s Oracle9i jDeveloper is designed for working with Oracle9iAS, which in turn is targeted at Oracle9iDB shops.

One hoped-for trend that failed to materialize was an increase in software reuse through components. Although Microsoft has successfully created the conditions that allow a flourishing Win32/ActiveX/COM component market to thrive, no other platform maker, including Sun, has been able to do so. Despite the intense efforts of companies such as ComponentSource, which works as a platform-neutral broker of components, the non-Windows component market just hasn't taken off.

Developers at large companies—or at least, companies that believe in formal modeling—found Object Management Group Inc.'s new Model Driven Architecture to be interesting. Designed to provide a platform-independent way of capturing business processes, MDA could work hand-in-hand with the Unified Modeling Language to take modeling to a larger-than-ever scale. It's too soon to see how widespread the adoption of MDA will be, although several tools vendors have pledged to support it.

The economy also played a big role during the past year. The collapse of the high-tech stock market deprived many tools and platform vendors of venture-funded free-spending customers, and also threw many skilled programmers, analysts and managers onto the street. Even companies that didn't fail re-examined many of their software development projects, looking closely at their ROI during these slow-growth times. With the bottom line under tight scrutiny by executive management, development managers scrambled to find ways to do more with less. That spurred interest in Web-based collaboration and other team-oriented resources. Development teams increased their productivity while decreasing travel expenses; these leaner, meaner, more widely distributed development teams should be better equipped to handle the inevitable flood of new projects once the economy turns around. ▮

Microsoft CERTIFIED Partner

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–Martin Hart, Memory Soft S.L.*

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Wise solutions

Software installations made easy™

ECLIPSE

◂ continued from page 1

tation to participate in Eclipse. "I've only known of Eclipse from third parties talking about it," he said, adding that he first heard about the project around April, which was about the time that IBM claims the first round of vendor invitations was distributed. Ron Goldman, Sun's current NetBeans rep, also claims not to have been contacted by IBM, Phipps said.

As first reported in SD Times last month ("IBM Software Donation: Move to Eclipse Sun?" Dec. 1, page 1), Sun alleged that Eclipse is a duplication of the efforts of NetBeans, which Phipps said includes about 80 developers building plug-ins, and several companies making stand-alone products. "At every point, we see Eclipse as a carbon copy of NetBeans," Phipps charged. "The design is based on a generic application call, it has application-level functionality implemented through plug-ins, it has a runtime that discovers available plug-ins at start-up, it [supports] multiple languages and allows non-GUI interactivity—[all] just like NetBeans. There are only two explanations: Either IBM has maliciously excluded Sun from its activity, or it has negligently failed to look at the NetBeans community and properly appraise and understand it."

Phipps added that contrary to IBM's public statements in the past, NetBeans is not controlled by Sun, but is governed by a democratic panel elected on a six-month cycle. "Sun's representation is a minority and can always be outvoted." By contrast, Eclipse board members serve two-year terms.

Even Scott Hebner, IBM's director of e-business marketing, agreed that the projects are similar, saying that NetBeans "has evolved to become an integration platform," and that in the broadest sense, the two projects are conducting "similar initiatives." And Stefan van Overtveldt, IBM's director of technical marketing for WebSphere, agreed that Sun's absence was conspicuous. "If you look at the entire Java development tools space, they're the only one missing."

According to Sun's Phipps, IBM's behavior is typical of a company new at initiating an open-source project. "This is the first time IBM has ever created an open-source community, and I would imagine they are making the same mistakes anyone does the first time they do open source," which might include a lack of due diligence. He said that IBM should invite the NetBeans board to participate in Eclipse. "It's quite possible that NetBeans would decide to merge, if anyone would actually ask," but no one did, he charged.

That is a claim that IBM flatly denies. Marc Erickson, project manager with IBM subsidiary Object Technology International, where the Eclipse Project was hatched, said that the companies considered to form the Eclipse board stretched broadly across industries. "We offered the opportunity to many companies, including Sun. The intent is to work on a level playing field if anyone else should want to contribute."

However, neither van Overtveldt nor Erickson would provide names of those contacted. Microsoft, which also has denied being contacted by IBM about Eclipse, would not grant an interview for this story.

"The truth is that IBM is excluding both NetBeans and Sun every step of the way," protested Phipps. "If they were actually to approach the NetBeans community—which was just waiting to have a big player like IBM join in and make the difference in the war against Microsoft—maybe we would recognize that we all have more to gain by cooperation than by competition."

The Eclipse organization is well on its way, having about 150 members and a board of directors that includes people from Borland Software Corp., Merant International Ltd., QNX Software Systems, Rational Software Corp., Red Hat Inc., SuSE Inc. and TogetherSoft Corp., in addition to IBM—the project's main donor. Vendors supporting NetBeans include BEA Systems Inc., Compaq Computer Corp., Compuware Corp., Embarcadero Technologies Inc., Iona Technologies Inc., Lutris Technologies Inc. and Websprocket LLC.

Andrew Weiss, CTO of change management software maker Merant, added that the primary benefit of Eclipse is that it enables developers to "choose tools that fit their needs without worrying about low-level integration" with their other tools. The Eclipse platform will enable a level of true integration that just isn't possible [otherwise]." And for tools vendors, it allows "a much broader range of high-quality integrations. It's a win-win for developers and vendors."

Dan Dodge, QNX's president, added that while his company's operating system has features in common with Red Hat's, the two companies will still benefit by serving on the Eclipse board and developing compatible tools. "Eclipse will let us add value to specifically target the capabilities of our own operating systems, and the other stuff we have to do in parallel. Eclipse provides an infrastructure that lets us collaborate."

And how does IBM explain the obvious connotation of the Eclipse name? According to Erickson, it was a coincidence. He described a brainstorming session at a meeting convened to name the project. "They were calling out whatever came to mind, trying out 'e-' names, as in e-business, e-commerce or e-tools. Someone called out 'e-clipse' and everybody thought it was a cool name."

But IBM's van Overtveldt, who was directly involved in the original process of naming the project, gave a different account. He said that the name Eclipse was selected by a single developer and intended to suggest "eclipsing proprietary development tools and their methods." ▮

NETBEANS VS. ECLIPSE

	NetBeans	Eclipse
Establishing company	Sun	IBM
Primary development language	Java	Java
Supports multiple programming languages	✓	✓
Platform support	Any JVM 1.2	Linux, Windows
Graphics toolkit	AWT/Swing	SWT
Generic IDE provided	✓	✓
Function added with plug-ins	✓	✓
Runtime checks for plug-ins at startup	✓	✓
Permits non-GUI interaction	✓	✓
Community governance cycle	6 months	1-2 years
Corporate developer enrollment	80	150
Can cross-reference editors, debuggers, help files	✓	✓
Built-in project management tool	✓	✓

J2EE

◂ continued from page 1

ny and standards-focused."

BEA is not the only company that is moving in this direction. IBM Corp. just recently added proprietary extensions to its WebSphere 4.0 Java application server with an enterprise edition for the creation of new bean types created by IBM, and Oracle Corp. has tied its 9iAS very closely to its database.

People are continuing to recognize that they are not getting what they were promised, according to Will Zachmann, vice president of Meta Group Inc.'s Open Computing and Server Strategies practice. "They are definitely not getting adequate performance with entity beans, nor reusability, rapid development or total platform independence. The actual ability to take a complex application from one J2EE application server vendor's product to another is just not happening."

In order to lure more Java developers to BEA, the Cajun framework, according to Sebastian, makes it possible for developers to build on top of the WebLogic platform without having to understand the details of object-oriented programming or the J2EE APIs. Pricing will not be available until general availability, which is scheduled for sometime in the first half of this year. More specific details are to come at BEA's eWorld Conference in late February.

Onno Kluyt, manager of Sun's Program Management Office for the Java Community Process, does not see BEA's upcoming plans as a threat to Java or its community. "I don't know how that would directly affect interoperability," he said. According to Kluyt, "BEA has every right to build a tool that runs well on their own application server." However, according to BEA, Cajun is an entire framework, not just a set of tools.

"The J2EE platform has proven to be a daunting environment for developers," said Zachmann. "Anybody who attempts to [help developers figure out how to get things done more efficiently] is going to be doing it in a way that is not standard, not part of the J2EE platform standard. There is nothing in J2EE to accomplish that task," alluding to the fact that the promise of Java is not all it was made out to be.

"Anyone that is doing enterprise Java development is learning that you don't pick up an application from one application server and drop it on to another without any pain," said Zachmann.

Zachmann questioned how Java can be standardized and, at the same time, have companies be competitive. "How do you distinguish between the notion that Java is completely standardized and the notion that people are going to compete to sell Java platforms at the prices that they've been getting them for? It is unrealistic to expect anything else," he said.

One of the big selling points when the Java platform was evolving was that a company choosing a Java solution could avoid the problems of vendor lock-in associated with Microsoft Corp.—delays in product revisions, more complexity than many corporate developers required, and the heavy-handedness that goes with being the overwhelming market leader. Yet, in what appears to have come full circle, these same Java vendors are now claiming their customers want one-stop shopping and have to move more quickly than the JCP can to provide the features customers are requiring.

Rohit Garg, vice president of Java technologies at SilverStream Software Inc., has seen resistance to standardization within the JCP. "Some of the standards are taking more time to get to closure, as people already have proprietary solutions for problems that arise." This, he implied, will lead to a fragmenting of the platform as companies developing these proprietary solutions fail to have them accepted as community standards.

"Java has got a lot of mind share, but it remains to be seen if it's going to keep it. Java has to start delivering on the promises if it wants to succeed," said Zachmann. ▮

Getting Your Mobile Apps to Adaptix

New tool from iConverse adjusts to mobile user's environment

BY EDWARD J. CORREIA

In mid-December, middleware developer iConverse was scheduled to release Adaptix, the client side of its Mobility Platform J2EE server middleware. According to the company, the new client software lets mobile applications evaluate the environment of the host device and configure themselves to best serve the user's data needs.

Andy Fox, co-founder and chairman of iConverse (www.iconverse.com), said Adaptix is designed to allow users to continue working with their data regardless of their connection status. "What a user wants is an uninterrupted working experience," he said. "Adaptix smart client technology runs in the mobile device and assesses connectivity speed, type and urgency of the process," and determines whether or not application data is local to the device, he said. The software then "makes a decision on what technology should be used" to best present data and keep it available.

Adaptix is part of iConverse's Mobility Platform, which Fox said permits developers to "publish enterprise applications across a broad set of wireless" browser-enabled devices, including those from Palm and RIM, WAP phones and devices running Windows CE and Pocket PC. Adaptix software currently is limited to Win32 and Windows CE-based devices, but Fox said a version targeting Palm OS should be available by April.

The data access technologies available to developers include WAP, database synchronization and JSP caching, and can be combined based on rules set up in advance through Mobile Studio, a drag-and-drop development environment, he said. "It's easy for a developer to let a search begin offline and go online only if nothing is found locally," he claimed.

The software decides which method is best for finding data, says iConverse's Fox.

According to Tim Rochford, iConverse's CTO and co-founder, what sets Adaptix apart from other mobile synchronization software is the way it combines multiple technologies. "Adaptix combines online technologies with message queuing and database synchronization into a platform that allows an application to continue to run and adapt based on what kind of coverage situation [the user] is in."

Rochford said that for existing applications written for Mobility Platform to take advantage of the new features of Adaptix, developers must modify them slightly. "They have to look at which pieces [of the application] will be able to live on the device," he said. For example, while time-sensitive data such as stock quotes or airline reservations would be better kept off the local device, "a frequently referenced technical manual could be quite useful hosted locally."

Mobility Platform sells for $15,000, and includes Interaction Server J2EE middleware for integrating back-end databases, EJBs and COM objects via SOAP; Adaptix client software for Windows CE and Win32 devices; Mobile Studio for an unlimited number of developer seats; and 10 mobile-user licenses. Additional mobile-user licenses cost $200 each. ▮

Java, Linux Dominate Embedded Year

Device makers embrace open source; repel hardware JVMs

BY EDWARD J. CORREIA

Last year's embedded systems market exhibited two extremes. There was the glacial advance of Java, which although available since 1995, is only now beginning to gain traction in embedded systems. And there was the meteoric rise of embedded Linux, which by one account is nearly overtaking proprietary RTOSes, the longtime mainstay of embedded designs.

Embedded Java's defining moment seemed to come in the opening months of 2001, when Sun Microsystems Inc. unveiled the Java 2 Micro Edition for both Palm and Linux. The move opened the door to a spate of Java-enabled devices and development hardware releases throughout the year, including those from Motorola, Nokia, Samsung and Sharp. The only Java-enabled cell phones being marketed in the U.S. were by Nextel Communications Inc., which expected to have 1 million units deployed by the end of 2001. According to a Nextel spokesman, NTT DoCoMo has already sold three times that many in Japan.

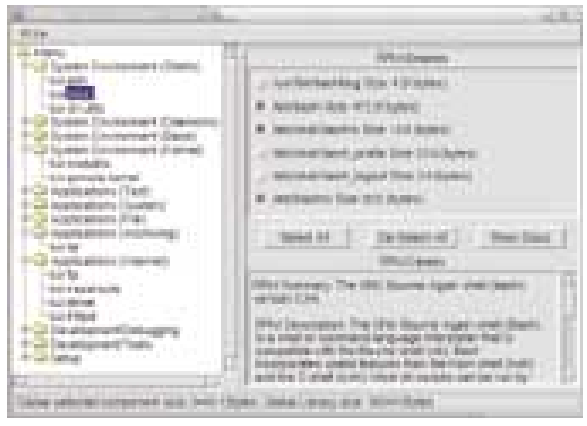
Sun also took steps to get Java directly into hardware. In June, the company joined forces with ARM Ltd. to incorporate a Sun-certified implementation of J2ME into ARM's Jazelle line of Java-accelerated processors and cores. But despite the availability of Java-enabled hardware from other manufacturers all year, according to market-research firm Venture Development Corp., there have been no chips with J2ME in hardware commercially deployed to date. Device manufacturers adding Java this year have so far stuck with software.

One notable defeat for Sun and its embedded JVM was news in March that it was being dropped by embedded leviathan Wind River Systems Inc., which opted instead for the Jeode JVM from Insignia Solutions Inc. The move was prompted by demands from Wind River customers for better performance of the virtual machine. Wind River had been licensing the JVM from Sun since 1995.

Embedded Linux has arrived, at least according to one report. Evans Data Corp. in its Embedded Systems Developer Survey, summer 2001, reported that 45.1 percent of developers polled are currently using Linux in their embedded designs or plan to in their next one. The study also showed that proprietary RTOSes—which generally dominate embedded designs—were in use or planned by about the same number at 45.7 percent; embedded Linux has closed the gap. Wind River's VxWorks, which has historically dominated the proprietary RTOS industry, was in use or planned in roughly a third of the designs.

Helping to siphon Wind River's market share was a pair of VxWorks-to-elsewhere migration kits that appeared last year. In its VxWorks-to-Nucleus kit, Mapusoft Technologies LLC combines emulation and API mapping to port applications to Accelerated Technology Inc.'s Nucleus open-source RTOS.

A similar approach was used in the VxWorks-to-Linux toolkit by embedded Linux developer MontaVista Software Inc. The kit joins MontaVista's pSOS-to-Linux tools released in 1999 that target Wind River's other major operating system. MontaVista also made headlines in May with its Hard Hat Linux 2.0, which it claims brings hard real-time and kernel pre-emption capabilities to *x*86 embedded targets, and promised the capabilities on MIPS, PowerPC and SH processors within 30 days. The company has since revised that promise, and says it will support the features on those processors plus StongARM and XScale with a release scheduled for LinuxWorld later this month in New York.



Red Hat combines GNUPro cross-development tools with its own bootloader in the Embedded Linux Developer Suite.

Red Hat Inc., one of the industry's leading Linux developers, increased its presence in the embedded industry with the release of the Embedded Linux Developer Suite, a collection of tools that combine the Linux 2.4 kernel with new GUI and kernel configuration tools and the latest versions of the gcc3 open-source compiler and C Linux libraries for multiple hardware platforms.

The year also saw the fledgling Embedded Linux Consortium divert from its original promotion-only charter to one of standards arbiter. The organization in April issued a plea to the industry to create embedded Linux standards to ward off fragmentation. The standards, which would include minimum functionality requirements such as real-time properties and availability of a file system, are stalled due to a lack of agreement on intellectual property rights. "The struggle is primarily on the legal front," said Murry Shohat, the ELC's executive director. He was hopeful that the latest draft agreement would be ratified before Christmas.

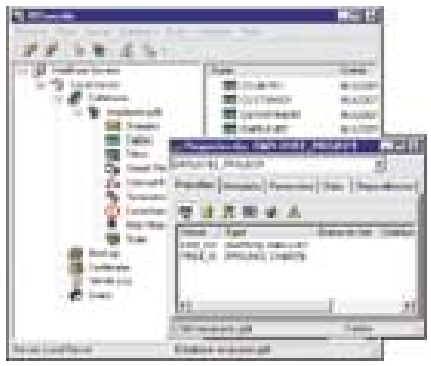
Embedded Linux also showed signs of maturity by maintaining its very own conference. Sharing space with the larger Embedded Computing Show at its previous two engagements, the four-day Embedded Linux Expo and Conference in June stood alone for the first time in its brief history, and did so again in November. According to the show's organizer, RTC Group, the ELEC is scheduled for this year in June in Dallas, and again in November in Tyson's Corner, Va. ▮

Borland Gets Around to InterBase; Adds Windows GUI Console, XML

BY EDWARD J. CORREIA

After releasing major updates to its development tools and application server in recent months, Borland Software Corp. has finally found time to enhance its database. The company has released InterBase 6.5, its small-footprint SQL database engine for Linux, Solaris and Windows, which it says can now generate XML data, has enhanced security for its metadata, and offers a more scalable and reliable way for developing Internet, mobile and embedded distributed databases. Developers have been using version 6 since April 2000.

Also new is support for very large databases and 64-bit I/O. This benefits developers because it prevents them from having to split up large databases into multiple files. The previous version limited databases to 4GB. Also supported is SQL rows, which according to the company can be combined with the SQL "order-by" command to provide ranking capabilities for SQL queries. This in turn gives developers a means to divide large query results into chunks of data small enough to be viewed on handheld computers and other devices with limited resources.



IBConsole can be used to administer databases on Linux, Unix or Windows servers.

With the ability to generate XML documents, InterBase now gives developers expanded data access beyond JDBC, ODBC and Microsoft Access databases. New JDBC methods have been added to bring the program up to date with the latest Java runtime environment (JRE 1.3). An asynchronous statement cancel has been added, which the company says gives client databases the ability to process canceled DSQL transactions through the InterBase API.

InterBase 6.5 (www.borland.com /interbase) also adds IBConsole, an integrated GUI front end for InterBase command-line tools. The Windows-only tool can be used for a multitude of tasks, including creating and administering InterBase servers and databases, managing users and setting up security on any LAN-connected InterBase server running on Linux, Unix or Windows. IBConsole replaces the Server Manager and Windows ISQL interfaces in previous versions of the program.

InterBase 6.5 is bundled with all Borland development tools, including Delphi, Kylix and JBuilder, and also is available separately in commercial server, desktop and open-source versions. ▮

With Kinectivity No. 2, Pencel Points to GUI Control, XML

BY EDWARD J. CORREIA

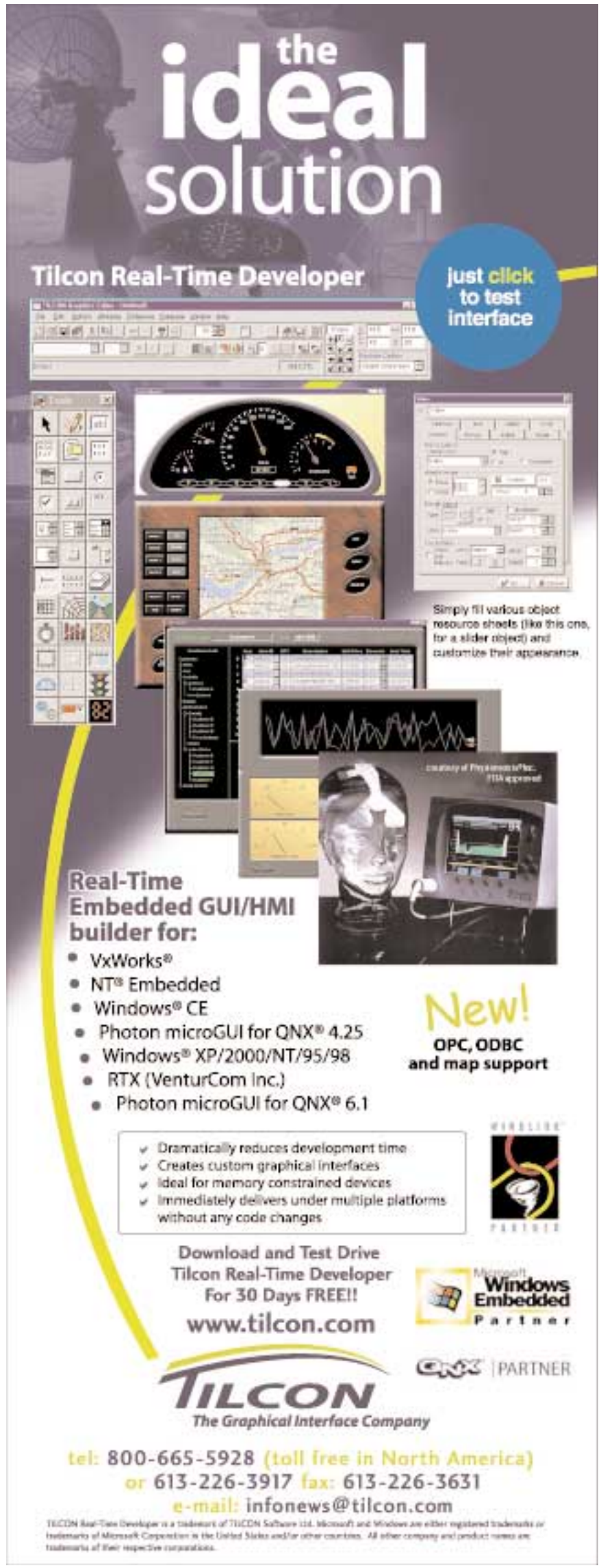
Pencel Corp. has released Kinectivity 2.0, the latest version of its RAD environment for Palm OS that now gives developers more control over user interface through custom forms and menus, and greater access to outside data sources with support for XML, the company says.

Kinectivity 2.0 offers more control of Palm apps' look and feel.

According to the company (www.pencel.com), Kinectivity uses a forms-based GUI to simplify the creation of Palm OS-based mobile applications for enterprise data access and synchronization, without the need for program coding. The new version broadens its OLE DB and ODBC database access capabilities with support for XML, which can now use HTTP to communicate with a wider variety of data sources, the company says.

The kit reportedly now includes the ability to create custom forms, giving developers greater control over the look and feel of their applications, including top and bottom bar presence and layout. Applications can include custom menus and can be fine-tuned further through the use of custom controls.

A Kinectivity Studio developer license, which provides local synchronization with applications and databases including Access, SQL Server and DB2, costs $295 with e-mail support or $695 with phone support. Pencel offers a Windows server component for $1,495 that permits connectivity to remote and wireless devices via the Internet, and includes 10 mobile-access licenses; additional mobile-access licenses start at $125. There are no runtime royalty fees required. ▮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e-mail: infonews@tilcon.com

EDITORIAL

Embrace and Extend

It's a move straight out of the Microsoft playbook: Embrace a widely supported industry specification, build products around it, and then create proprietary extensions that seduce developers—while locking customers into your own implementation.

But this time, nobody can point fingers at Bill Gates. Rather, the giants of the Java community are increasingly using the J2EE specification not as a target, but as a minimal baseline for creating their own proprietary platforms.

When Java and J2EE were newly hatched, the vendor community had two strong messages. The first was "Write once, run anywhere." The other was "Collaborate on specifications, compete on implementation." Together, the goal was to create an environment in which any tool could be used to create Java applications, and those Java applications would run in any compliant Java Virtual Machine or on any compliant application server. While sticking with the agreed-upon specifications, the vendors would differentiate their wares by making them faster, more memory-efficient, more scalable, and able to run on more and more platforms than their competitors' products.

That wasn't enough. The slow pace of the Java Community Process, tough economic times, and a realization that customers cared more about developer productivity than strict adherence to agreed-upon specifications caused nearly every J2EE vendor to extend what it had formerly embraced.

Oracle's 9iAS is tied tightly to Oracle's 9iDB with database and OLAP functions. IBM's WebSphere Enterprise Edition offers proprietary bean types that the company currently refuses to submit back to the JCP. Most app server vendors have created their own ways of implementing Web services. And now BEA is proffering a J2EE application framework that promises to reduce the learning curve of Java developers—but the applications they build on that framework will run only on WebLogic.

It appears that these extensions are just fine with Sun. As long as the J2EE licensees don't make changes to the Java language itself, and as long as they meet the minimal requirements of the J2EE specifications, the company's spokesman implied, they can do whatever they please.

Even if that means turning "Write once, run anywhere" into "Write once, run here." Or if the unwritten motto is now "Collaborate on specifications, compete on extensions." Portability is out, lock-in is in.

So, where's the harm? Obviously, Sun and its JCP think this is all fine and dandy, and perhaps it is for the short term. In the long run, it's unlikely to strengthen the platform.

As the major vendors add more and more of their own intellectual property to their app servers, tie those app servers more tightly to their databases, and build development tools fine-tuned for those extensions, they'll place less emphasis on waiting for the JCP's snail-like evolutionary processes. Why wait for the JCP when you can build it yourself? Why submit your IP to your competitors?

Does Sun really expect the J2EE licensees to rip out their proprietary extensions when the JCP finally gets around to adopting new technology? Won't happen.

In collaborative development communities, divergent evolution—popularly known as "forking"—is bad. Divergence is damaging Java and J2EE. Unless Sun does something soon, Java will be totally forked. ▮

GUEST VIEW

GHOST FROM THE PAST

Aspect Oriented Programming (AOP) is an example of an old idea coming around again in a different dress. While it certainly has merit, it may not be the answer to all of our programming needs.

It is not news to say that over the years, the complexity of software systems has increased tenfold. Software design has evolved to a level of complexity that requires engineers to continually develop more functional programming languages to address these issues. The principle of separation of concerns is one of the more prevalent ways of managing this complexity, whereby system concepts are treated as separate software units. Traditionally, Object Oriented Programming (OOP) has been the method of choice. However, as we have moved from sequential programming to concurrent and distributed programming methods, the tenets of OOP are harder to apply.

ADAM KOLAWA

The implementation of certain technical requirements often necessitates discrete objects to perform functions that cut across an entire software system, negating the idea of functionally contained objects. AOP is intended to develop and maintain application code that captures the necessary cross-cutting characteristics of a software system in separate program entities. In this way, the application classes maintain their well-defined responsibilities while still performing cross-cutting functions.

Is AOP a sound strategy? Time will tell, of course, and programming environments change at lightning speed; however, simply because a programming strategy becomes widely accepted does not necessarily mean it is the best strategy for all of the problems it promises to solve. We are fortunate that in this day and age, we have the benefit of experience and perspective to gauge the effectiveness of new ideas. By analyzing the usefulness of AOP now and presenting alternatives, we can possibly affect the acceptance of a like idea in the future. At the present time, implementation languages like AspectJ are very recently available so we can put the strategy to practical use.

Admittedly, the justification for AOP as just presented seems compelling on the surface. Like OOP and Structured Programming before it, it apparently permits programmers to represent the problem using language constructs that conform to the problem itself, rather than forcing the problem to conform to the language. If this were the primary motivation for the strategy and if it did not result in more work to implement than it saves, AOP would be a sound strategy. However, upon closer examination, this is not the case.

AOP: ONE OPINION

With 25 years of experience in software development management primarily focused on parallel computing and software testing strategies, I offer an opinion on AOP in light of the success and failure of many previous programming trends that I have seen come and go. Some years ago, there was a similar movement to write complicated software that would optimize performance. Developers, including my team, were working to optimize current software and the current architecture. As a rule, these attempts failed as widespread practices. They work only when the benefit of performance cannot be achieved in any other way, and the extra performance is required for particular applications during particular time periods. This is not true for AOP, which does attempt to be a universal practice. In my opinion, AOP is not the best strategy to deal with problems it attempts to solve. Let's take a closer look to verify this assertion.

Look at the justifications for AOP. Developers relate to performance optimization in environments with multiple computing or shared resource models (such as parallel computers, computer clusters or multi-tiered environments). The reality is that the experience of the development community, going back to the earliest mainframe clusters and parallel processing systems, is that it's easier to build faster computers than it is to train hundreds of thousands of programmers in the art of resource sharing and performance optimization in multiple-computer or multiple-processor environments.

Parallel computing and clustering have very clear, though circumscribed, uses for performance optimization. For example, parallel computing is ideal for transaction processing. But for the most part, historically and looking forward, the problem of performance in computing is primarily solved by building faster processors—not increasingly complicated code. As processors become faster and more powerful, the need for optimizing the performance of multiple-processor systems becomes less important. There is still enormous performance value gained through multiple processors, but there is by comparison relatively little value in trying to squeeze every last ounce of performance out of the architecture. As everything beneficial has a cost, if the cost outweighs the benefit, why do it? In the case of AOP, the law of diminishing returns applies. The effort of implementing advanced programming techniques to squeeze extra performance out of a hardware platform is usually far greater than the incremental benefit from this effort.

The limited time available for programming is better devoted to solving business and scientific problems than in trying to optimize code for a particular kind of computer architecture. In fact, I feel very strongly that if the development community wants to optimize its efforts over the long haul, programming must *not* reflect the architecture of the computer. It is too limiting and too temporary.

THE BOTTOM LINE

Another way to view this issue is the cost effectiveness of the programming effort. The cost benefits of fine-tuning the optimization of software (or shortening the development time for optimization efforts) disappears completely in only a few months or years as faster systems become available or as the problem changes and the software has to be rewritten. So, in reality, learning and applying AOP does not buy you a lot in the long run. In conclusion, my advice to developers and development managers considering AOP is: "Don't bother; you've got better things to do." ▮

Adam Kolawa is chairman and CEO of ParaSoft.

LETTERS TO THE EDITOR

ASP.NET SUPPORTS AUTHENTICATION

I implore you, take the time to make sure your authors have at least made an attempt to research the topics they write about. Oliver Rist's contrived column ["ASP.NET: Where's the Security?" Dec. 1, page 29, or online at www.sdtimes.com /cols/winwatch.htm] is so lacking in truth and so devoid of knowledge of the restrictions of authentication systems that it should be considered for a recall.

ASP.NET as a server technology must support the capabilities of the client. To whine about the insecurities of basic authentication (which should always be performed over SSL anyway) or cookie authentication is a waste of time. Most all Web sites that I am aware of are completely based upon cookie authentication. ASP .NET supports these authentication schemes because the clients do. Period. When the author invents a new authentication scheme that all browsers will support that is 100 percent secure, we would all love to see it.

Also, the author clearly has no idea how to configure the web.config file to control IIS settings such as impersonation, session management and authentication settings (yes, even at the file level) programmatically—no system administrator needed. Many claims made in the column are patently false. Please ensure future articles are better researched before more people are misinformed.

Chip Andrews
Clarus Corp.

STILL BETTER THAN .NET

Regarding your article ["Not Everyone's Happy With Java Evolution," Nov. 15, page 23, or online at www.sdtimes.com /news/042/special2.htm], I think that regardless of flexibility allowed in the J2EE 1.3 architecture, this is still better than going with Microsoft's .NET. Superficially, Microsoft may seem to grab many eyes, but I think we all should look at the ultimate picture of allowing Microsoft to have control over every area of technology. This may seem like it is a huge benefit to others, but I am sure that in the long run, it will come back to bite us.

Everett Lockhart

NO LICENSING SUPPORT

Your article ["Microsoft Partners Poised for .NET," Nov. 15, page 8, or online at www .sdtimes.com/news/042/story10 .htm] was a great round-up piece. I want to point out, though, that as a marketplace, ComponentSource is not primarily focused on Microsoft-compatible components, as referenced in your article.

We are truly platform agnostic—and have dedicated author recruitment teams for both the Microsoft and Java technologies and other component models, such as VCL.

Our marketplace basically reflects the state of the component market—we are finding that authors are reluctant to port their expertise to EJB due to the lack of licensing support in the J2EE spec. We are lobbying Sun and the JCP for inclusion in J2EE 1.4.

Celine Alee
Director of Corporate Communications
ComponentSource

TWO HEADS ARE BETTER

I agree totally with this article ["Great Minds Don't Think Alike," Nov. 1, page 28, or online at www.sdtimes.com /news/041/special2.htm]. I have been saying for years that two (or more) heads are better than one when it comes to technology. Some of our best ideas seem to come from bits and pieces of thoughts and ideas from several people. Keep up the good work!

Mary Evans
Technology/ Communications Specialist
State of Florida

DOING MORE WITH LESS

I read with interest your article "Process: The Key to Successful Teamwork" [Nov. 1, page 27, or online at www.sdtimes.com /news/041/special1.htm] and wanted to share my thoughts.

I know "collaboration" is a hot topic and, if one believes the hype, will allow us to do more with less. However, to truly do more with less, rather than merely speed up or outsource inefficient processes, we need to reduce technical complexity and eliminate as many tedious and error-prone steps as possible.

My understanding of collaboration technology means we are attempting to improve lines of communication within an existing process framework. But for dramatic improvements in software productivity and quality, we need to entirely change the process—not just streamline it. I believe an approach of model-based development and code patterns applies.

A model-based approach to software development brings end user and technologist closer together. The collaboration tool in this case is the repository-based model. How effective can collaboration be if the media is a text document? Code patterns contain the technology-specific details and, when combined with a model, produce a large percentage of the business application.

The combination of models and code patterns eliminates work (and potential sources of errors). The idea is not to attempt to work faster by using programmers on the other side of the world; it's to largely eliminate the work that those programmers do!

Model-based code generation is especially efficient in porting applications to new technologies. I highly support the role of software configuration management tools in improving software processes; however, automating processes is an important first step.

John Vosburgh
General Manager, Modeling Tools
Visible Systems Corp.

WILL LICENSING CHANGE?

I enjoyed David Rubinstein's column ["COBOL's Back in (Micro) Focus", Sept. 15, page 34, or online at www.sdtimes .com/cols/moneywatch_038.htm] very much. I am a one-man shop that does 95 percent of its work in COBOL and have just finished converting a DOS COBOL package to Windows using [Merant's] NetExpress. The Merant licensing policy was absolutely ridiculous, and I am extremely interested in if and how that may change now that Micro Focus is on its own once again.

Paul Hoekema
Hoekema Consulting

COLDFUSION A WINNER

I enjoyed Andrew Binstock's column ["Warming to ColdFusion," Sept. 1, page 33, or online at www.sdtimes.com/cols /middlewatch_037.htm].

Being from one of the companies you listed in the article as using ColdFusion, Schlumberger, I can confirm that we are using it not only for medium-scale intranets and applications, but also for some heavy-duty enterprise-class Web-based applications written in CFML. I've been developing with ColdFusion for almost six years and cannot say enough positive things about it.

People often get the impression that it is limiting because it is so simple to use…but that is absolutely not true. It just means that you can do very complex things much more easily and quickly than you can in other languages.

You mentioned our company and a couple of others in regard to scalability, but you missed a few major sites/companies using ColdFusion that are certainly more impressive than half.com. For instance, NASA uses ColdFusion, including inside Mission Control and on the new International Space Station. (I don't know about now, but they used to have the largest single force of CF developers.) The IRS and Department of Defense use it, as does Toys "R" Us. The U.S. Mint uses it in a 30-server cluster setup—you cannot scale much larger than that!

Another feature that sort of falls under scalability that you might want to note for future articles is that with ColdFusion, you can move your code between different operating systems without changing your code. We develop our applications on a Windows NT 4.0 development server running IIS 4.0 as its Web server, and then simply copy them over to our production server, which is a Unix box running Solaris 2.8 and the Apache Web server. And we don't have to change our code at all. We know that we could switch development platforms tomorrow to Unix, if we desired, without a glitch.

ColdFusion is definitely a winner. I wish it got more attention.

Randal Blackburn
Developer/Designer
Schlumberger Network Solutions

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PREPARE FOR UNIVERSAL MULTITHREADING

In early 2002, Intel Corp. intends to unveil a multiprocessing Xeon chip with a new feature the company calls hyperthreading. This capability enables different threads to execute simultaneously on the same processor (which is why the rest of the industry calls this technology simultaneous multithreading, or SMT). Hyperthreading means that for the first time, two different programs can run on the same processor without recourse to context switches—their instructions are truly executing concurrently. SMT, whose delivery is also promised by all other chip manufacturers, derives from the current superscalar processor architecture.

As most readers know, Pentium and Xeon processors today are superscalar, which means they have more than one execution unit. This enables more than one instruction to execute on a given clock cycle.

Until the release of hyperthreading, however, these multiple execution units could handle only instructions emanating from the same thread. They did this by looking ahead in the instruction queue to find instructions that did not depend on the one currently executing. If any were found, they'd be shipped off to another execution unit. Once these instructions were executed, their results would be folded back together with those of the original instruction in the right order so that it appeared from the exterior as though all the instructions had been faithfully executed sequentially.

The inability to allow different threads to run on separate execution units was due to the difficulty of reproducing the processor state for the two threads—that is, the problem of managing two sets of registers, two instruction queues, two sets of interrupt status controllers and so forth. In addition, a scheme to share data and instruction caches had to be devised.

MIDDLEWARE WATCH

ANDREW BINSTOCK

With the Xeon chip, Intel has solved these problems. (Note: Xeon here refers to what would be called the Pentium 4 Xeon. With the release of the Pentium 4, Intel implemented a new naming scheme in which Xeon appellations no longer are preceded by the name of the Pentium generation. Hence the full name of the upcoming Xeon processor is, well, the Xeon processor. Intel has not announced how it plans to distinguish subsequent generations of Xeon chips.)

Industry analysts expect that Intel will push hyperthreading into dual-processing Xeons and then, sometime in 2003, into the desktop Pentium 4. If this does come to pass, it will usher in a new age in programming: one in which programs will need to be coded as multithreaded applications to obtain maximum performance. This step will have the effect of changing the way applications are both designed and coded.

The design part will undoubtedly be the biggest change, especially for developers accustomed to coding for the desktop. They will need to segregate their processing logic into threads that can execute in parallel.

This is not an intuitive skill, in much the same way that object-oriented programming (OOP) necessitated a substantial change to design to be used properly rather than as a mere appliqué to existing code. To work well, threads have to operate orthogonally—in other words with as few shared resources and synchronization points as possible.

For programmers accustomed to top-down programming techniques, which are still disproportionately represented on the desktop, the default behavior is to think of threads in terms of related activities that flow from each other and to each other. For them, the new paradigm will take some getting used to.

Server-oriented programmers are more comfortable with threads. They have worked with applications that perform discreet, unscheduled tasks (such as those performed by a Web server or a database) and so they are very comfortable with the paradigm. How they will transfer these skills to their colleagues working on more-traditional linear problems will be important.

Coding, likewise, will require new perspectives. Looping while waiting for an event or interrupt (called a spin-wait) will have to be recoded with great care; likewise looping while waiting for a resource to free up (a spin-lock). Data structures will need to be revisited to make sure they don't unnecessarily tie up threads. And code itself, such as function calls and conventional loops, will need refactoring. In many cases, the new code will be far from intuitive.

At its fall 2001 developer conference, Intel showed a loop that copied one block of data to another using a standard loop. A faster version of the loop required almost twice the code as the slower one and the changes were not intuitive, unless you first analyzed exactly how multithreaded systems would handle the task.

In a few years, it's clear, most of our acquired expertise in writing efficient code will need to be thrown out. And what is saved will need revision. If you're not thinking along these lines, soon you will have to.

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

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IS MICRO JAVA TOO SMALL?

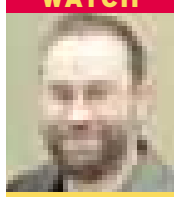
It sounds like a good idea: Why not put Java into handheld devices with a version designed for a small memory footprint and low-powered—in every sense of the word—16- and 32-bit processors? The result, of course, was the Java 2 Platform, Micro Edition (J2ME).

J2ME is meant to run in devices with as little as 160K of memory while retaining enough standard Java APIs to be useful to Java programmers who cut their teeth on J2EE. And, as you can probably guess, J2ME is also meant to be upwardly scalable with J2SE and J2EE and for its code to be interoperable between devices using J2ME. Haven't we heard that tale before in different environments?

In practice, for J2ME to be useful on mobile devices, it also needs the Connected Device Configuration (CDC). The CDC J2ME implement provides for a virtual machine, typically the C Virtual Machine (CVM) with core libraries. To put that to work, your platform requirements suddenly jump to a 32-bit processor and 2MB or more of memory, which the specs say can be either RAM, ROM or flash. Let's be real. You're going to need 2MB of RAM.

Of course, you can also try the Connected Limited Device Configuration (CLDC) route. In this approach, you may be able to squeeze in at 160K using Sun's no-frills K virtual machine (KVM). Of course, if you want your J2ME device to communicate with the outside world wirelessly—and what's the point of even building these things without that functionality?—you'll also need to add in the Mobile Information Device Profile (MIDP). To make a long story short, you're going to quickly break that 160K minimum memory requirement.

JAVA WATCH



STEVEN J. VAUGHAN-NICHOLS

Some programmers have also told me that they've found it hard to dynamically add a library to the KVM to allow them to add functionality to their devices. As it is, if you want to add a new feature to the J2ME in, say, a cell phone, you can pretty much forget about simply updating the software.

Still, a quick survey of Bill Day's listing of J2ME Emulators/Simulators, SDKs and IDEs reveals that almost all current development work is aimed at CLDC/MIDP instead of CDC/CVM. (Day is Sun's technology evangelist for J2ME and maintainer of the J2ME Archive at http://billday.com/j2me).

One problem here is that programming in anything at the embedded level, or close to that level, isn't easy. Since J2ME isn't real-time, I don't count it as an embedded system. But, J2ME comes as close to embedded programming as most Java developers will ever get. Some insist on looking at J2ME as just a better client-side implementation of Java. They're underestimating the programming skill needed at a level where every byte counts.

There are some development tools available. Besides the usual support from Sun, third-party handheld OEMs, like Motorola, Nokia, Palm and Research in Motion, are delivering SDKs. And, Borland is now shipping its JBuilder Handheld Express. Other smaller software houses like 4thpass, Aligo and Covigo also have J2ME development tools.

Heck, there's even real-world product shipping with J2ME running. The Nextel Motorola i85s brought stand-alone J2ME apps to a mobile phone last summer. Now, with the i90s, J2ME with CLDC support can be used to build network-aware programs. The first is SSL support for secure HTTP data transfers from this cellular phone.

From a consumer's viewpoint, however, the most important plus of this J2ME-enabled phone is that Nextel Wireless Web subscribers will be able to use over-the-air application downloading to grab new Java applications, so long as they'll fit into the device's 384K of RAM. Never underestimate a device that enables users to grab new games even if they turn out just to be Java versions of Minesweeper.

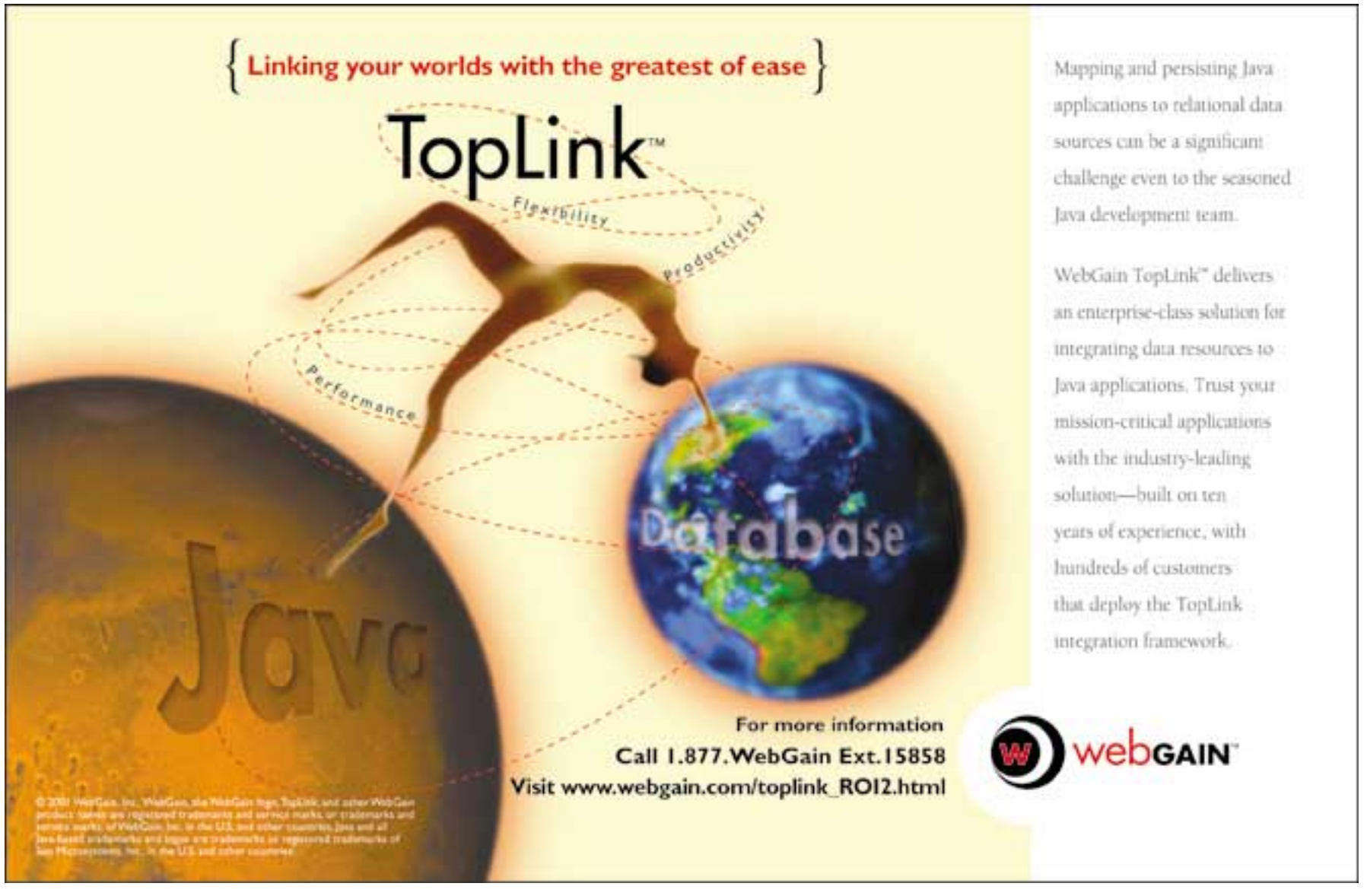
When you're developing for specialized, low system resource devices, I don't care how good your tools are, you'd better know just how J2ME is working with the underlying embedded operating system and hardware at an intimate level or you're in for a world of hurt. That's hard work. That's time-consuming work. Can you and your team afford it?

Don't mistake me; I'm sure some Java developers will be buying Porsches as a result of their J2ME work. But I think it will be only those developers who have business managers with existing strong ties to the handheld device and mobile phone powers who will strike it rich.

And, would it surprise you to know that Microsoft will soon be revealing .NET Compact, their answer to J2ME? Sources at Microsoft tell me that they already have a trio of major mobile vendors who will be deploying .NET Compact using Windows CE for mobile phones (an operating-system code named Stinger).

While I can understand the J2ME temptation, I think the inherent problems with limited environment programming and upcoming Microsoft competition make it too expensive for most Java development shops. Do you want to make money in 2002 from Java? I'd stick with J2EE and servers. ■

Steven J. Vaughan-Nichols has been writing about technology for more than 15 years and also has worked as a programmer for NASA and the Dept. of Defense.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SECURING THE WIRELESS WEB

ROME — Somehow, the subject kept getting changed, or at least modified. I was moderating a panel about wireless security at a conference in the Italian capital, but my panelists kept bringing up the subject of wireless Web clients. And we're not talking about something as simple as having a wireless LAN connection. Now the subject of the wireless Web has moved on to other wireless devices. Like cell phones.

Here in the U.S, the concern about designing for wireless devices hasn't been a big one. Yes, there are plenty of cell phones out there (including the Sanyo SCP-6000 I'm using these days) that include Web browsers. But most developers that I've heard from haven't been doing a lot to tap into this market. Likewise, wireless handhelds are mostly being ignored.

You can assume, however, that wireless communications won't be ignored much longer, especially by businesses that wish to talk to consumers directly. Now that newly capable third-generation devices are about to be launched in Japan, and are only a few months away in the rest of the world (including the U.S.), there's no question that companies will find themselves in a rush to support these new Web-capable devices. And guess whose department will get to do the development? You guessed right.

In a way, developing for wireless devices, especially the new 3G devices that are getting ready to hit the market, is a lot easier than what you're used to. There are no graphics to deal with, for example. You won't be able to put a lot of text on the screen at any time because these devices have tiny screens that are impossible to read when crowded. And they're more secure than you might think.

There are, however, some things you need to think about, being as how you're going to be developing a version of your Web site for wireless devices sooner or later.

- Which information on your Web site is most necessary to mobile users? How can you display that information in as little space as possible, while still keeping it useful?
- You'll need to find a way to present the information without graphics, since most of these devices don't do graphics, and the rest don't have any significant amount of bandwidth anyway.
- Remember that you'll need to craft your wireless site to require the simplest possible input. Users with keypads or handwriting recognition can only do so much, especially since they may also be driving at the time.
- These devices connect to the Internet or your intranet using proxies. You'll need to learn from the providers what's required to work with these.
- 3G devices use a smart card that uniquely identifies each user. You should be prepared to use this as a way to help authenticate your users, and you'll need to come up with something else as well, such as a PIN or password, since people do sometimes lose phones and other wireless devices.
- You'll need to start learning about how these devices work, so that you can test early to find out what works and what doesn't.
- Remember that these devices, which are much more than phones but much different from computers, have their own set of characteristics. You'll need to learn about their browsers, their e-mail clients and their means of handling Web programming ahead of time.

Remember also that there are some capabilities that will eventually be available for 3G and other wireless devices. The federal government is going to require that wireless providers have the ability to locate their devices, which means that eventually you might be asked to exploit that capability. The reason you'll be doing this is so your customers or users can be told when they're near a store or other location they might want to know about.

If you can do it while you're developing the rest of your wireless infrastructure, you might as well do it. It will be easier than adding it later.

And, of course, you'll need to be aware that the wireless devices that are arriving within the year aren't all telephones. You'll also have to be able to support handheld computers and other similar devices. This means that you'll need to be able to identify what sort of terminal is on the other end, and present the information appropriately.

So, as you can see, the advent of wireless clients is going to keep you plenty busy. In some ways, your life will be more complex, because wireless communications adds a layer of complexity beyond what you're used to. On the other hand, it also adds a new simplicity as you distill your Web site down to its essentials, and that can't help be anything but good.

After all, there are few Web sites that can't benefit from a little more simplicity. ▮

Wayne Rash is a technology journalist and consultant.

WINDOWS XP HOME: IT'S WHAT'S FOR DINNER

There was smoke, fire and brimstone, but after the air had cleared, shrink-wrapped Windows XP was finally running in the bunker-style geek-paradisiacal test lab that looks suspiciously like my basement, only with more wires and a terrified cat.

The verdict: I've got to admit, it's a step up. Of course, that's a step up from Windows 98 and Windows NT, but let's not ruin the joy of the moment.

But is that stunning endorsement enough to sway developers writing code for previous iterations of Windows, particularly using the Windows 9*x* codebase, to the new Windows XP platform? Not such an easy question; the answers revolve not only in the technical differences between Windows XP and Windows Me on the home front and Windows 2000 on the business front, but also in its prospects for user acceptance.

For developers of consumer-oriented applications, I would recommend moving toward Windows XP as a development target—today. User acceptance may be slowed somewhat by a lagging economy, but no new home-oriented PCs will be shipping without Windows XP installed, so the audience is inevitable.

And more important, the technical sophistication of the new operating system leaves Windows Me and especially Windows 98 deep in the dirt, especially when it comes to security.

The most visible security feature is the Internet Connection Firewall (IFC), basically a personal firewall built into the operating system. By default, this package blocks all incoming network traffic, including even Windows XP's internal Remote Desktop. But you can create openings manually at the traffic or port level.

I like it, but it's not enough to sway me from meatier protective packages, such as ZoneAlarm Pro and WinProxy. (Of course, I haven't tried running one of those on Windows XP yet, so look out for a possible incompatibility rant in the near future.)

Speaking of incompatibilities, however, Microsoft has done a significant amount of work in stabilizing the operating-system architecture. Device drivers are not only detected and loaded, but also verified against a Microsoft-approved compatibility list with a block option for the user; and while I was able to crash an application the first day, I couldn't crash the operating system itself.

You can even run more than one version of the same DLL in memory simultaneously. Windows XP now also optimizes config settings during boot using the last eight boot patterns as the basis for heuristic analysis.

Home multimedia and game developers should be happy as well, since Windows XP is the best Windows platform yet for these applications. The software includes all kinds of bundled photo, video and music playback and even editing features, but still leaves enough meat to allow third-party developers to build applications in these arenas.

DirectX 8 and its associated 3D video features have also been upgraded for one of the deepest and smoothest 3D and multimedia platforms available.

A word to the wise here is hardware. As in all previous Windows generations before it, Windows XP is a monster resource hog, so expect to ask users to be running a significant hardware platform. RAM allowances take roughly 128MB as a minimum and will undoubtedly average 256MB or higher in new machines.

Further, certain Windows XP functions have been specifically optimized for the Pentium 4. This is especially important for multimedia and game developers, as most of those optimizations are aimed at DirectX 8 and 3D rendering.

Network support is a double-edged sword—sharp in Windows XP Professional, but dull as butter in Windows XP Home. Basically, if it's not part of Microsoft's vision of a home network, then Windows XP Home can't connect to it. And that includes any network based on Windows Domain security.

That's a blow, as is (potentially) the much flamed-about support for raw sockets. Microsoft's attitude here is disturbing, especially because Windows XP Pro users can add their own security at the network level—but Microsoft's vision of home networking doesn't leave a lot of options in this regard.

From the big-picture perspective, Windows XP Home is worth delving into from the application developer's perspective. You'll find richer features within the operating system and much richer opportunities in its associated libraries, especially multimedia.

I didn't notice much of a performance boost over Windows Me on my existing machine, but it's definitely more stable. Security is better too, though not perfect, and that's a hot button for Redmond as there's still quite a bit of work happening in this area.

You'll definitely want to pay attention to all of Microsoft's new initiatives in this direction. That includes not only Internet security, but also authentication and Web services. ▮

Oliver Rist is a freelance technology journalist and vice president of technology at AIC Inc.

CLEARING THE WAY FOR GROWTH

It is said that destruction clears the way for new growth. The year just ended surely will put that theory to the test.

The shakeout of the dot-com industry, which pretty much bottomed out over the summer, created an environment in which venture capitalists are again requiring fundamentally sound business plans to underlie the bells and whistles of the latest technology. Money is again flowing, albeit at a slower pace, but it is being meted out cautiously. The companies benefiting from this funding will have a greater chance of success right from the start. Meanwhile, the dramatic reductions in market capitalizations that resounded throughout the high-technology sector as a result of the shakeout have given businesses the chance to turn their attention inward, to fully integrate the product lines acquired during the go-go times of the mid- to late 1990s, and to inspect new platform offerings being rolled out for Web services and EAI before making a commitment to buy.

INDUSTRY WATCH

DAVID RUBINSTEIN

Of course, the acts of destruction most dominating the events of the latter part of 2001 occurred on Sept. 11, when New York's Twin Towers and the Pentagon outside Washington, D.C., were attacked by terrorists. The U.S.-led strikes against the Taliban in Afghanistan, the threat of bioterrorism and the uncertainty of airline security have left Americans uneasy. Yet from these events, growth most assuredly will follow. In fact, barring any late collapse, the technology-dominated Nasdaq index will have closed the year at a level higher than where it was on Sept. 11, when the most recognizable symbol of the strength of the American economy was leveled in a horrific few hours.

As fear has reduced the amount of movement throughout the country, companies that can provide remote access to development projects—such as TeamShare Inc. and Starbase Corp., which acquired Technology Builders Inc. for $36.9 million in stock in February—have new opportunities.

While most companies spent the better part of the year in retrenchment, some were able to take advantage of the lower valuations to acquire companies and technologies to gain advantage in their industry sectors.

In perhaps the biggest deal of the year, both monetarily and in terms of market position, IBM Corp. shelled out $1 billion to acquire Informix Corp., and claimed the database market was now "a two-horse race" with Oracle Corp., which came out with a J2EE-compliant application server, 9iAS, to compete with market leaders IBM and BEA Systems Inc., among many others.

In fact, there was quite a bit of consolidation and new growth in the Java application server space. In January, Hewlett-Packard Co. acquired Bluestone Software Inc. After a year of integration, HP made the Bluestone name disappear and wrapped the application server technology into a new HP-AS platform. A month later, Macromedia Inc. bought out Allaire Corp., acquiring the JRun application server along with Allaire's ColdFusion. It remains to be seen what will ultimately be done with JRun, a well-regarded application server that has not gained significant market share.

INDUSTRY • 2001 A LOOK BACK

And the emerging Web services standards and protocols have brought into existence at least two companies offering Web services platforms: Grand Central Networks Inc. and Flamenco Inc. Their idea is to provide the connections that will allow XML, SOAP and UDDI to flow easily between trading partners.

Of course, the recession our nation has officially entered has created a great deal of pain. As companies have failed or contracted to prop up their bottom lines, many technology sector jobs have been lost, and have yet to be replaced. Many people who took the leap of faith to join a dot-com start-up now find themselves on the outside of the work force looking in.

In the new year, it is my wish that we all can experience new growth, both personally and professionally, in an environment of peace and prosperity. As Charles Dickens wrote, "God bless us all, everyone!" ■

David Rubinstein is executive editor of SD Times.

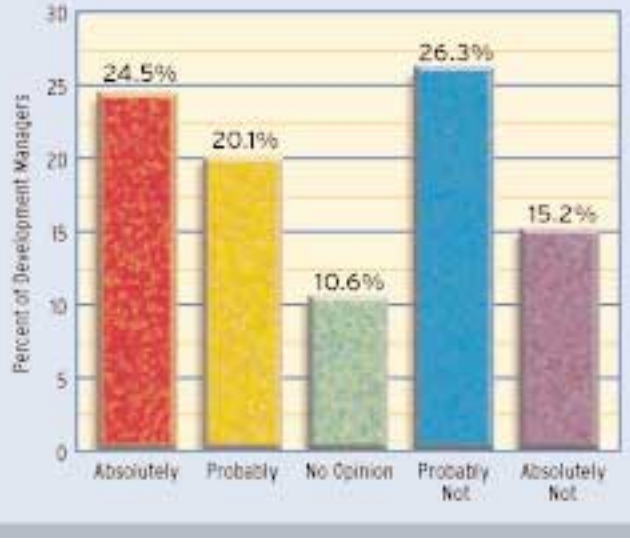
FROM BULL TO BUST

After a year in which the markets were mostly flat, a late-year run has helped push the stock markets toward the levels of a year ago—which were down dramatically from 1999. Here is a look at the performance of selected stocks over that time:

Company	Dec. 1, 1999	Dec. 1, 2000	Dec. 1, 2001	Peak	2:1 Split
BEA	21	63	16	86 (10/23/00)	12/20/99, 4/25/00
Borland	8.6	5.2	14	16 (12/7/01)	none
HP	38	32	22	67 (7/13/00)	none
IBM	103	95	115	133 (9/1/00)	none
Intel	38	34	32	74 (8/31/00)	none
Macromedia	61	68	22	118 (7/17/00)	none
Microsoft	93	56	64	119 (12/27/99)	3/29/99
Oracle	17	26	14	46 (9/1/00)	1/19/00, 10/13/00
Rational	25	36	19	69 (9/29/00)	9/5/00
Red Hat	105	6.5	7.9	141 (1/10/00)	1/10/00
Sun	32	38	14	64 (8/28/00)	12/8/99, 12/6/00
VA Software	239	8.8	2.6	242 (12/17/99)	none
Nasdaq	3,533	2,645	1,904	5,048 (3/10/00)	
DJIA	10,998	10,373	9,763	11,722 (1/14/00)	

Will You Be Developing Wireless Apps Next Year?

EVANS DATA WATCH



Software development with no strings attached. Or, at least, no network cables. Nearly half of all development managers surveyed by Evans Data Corp.'s Enterprise Development Management Issues study reported that they were probably or definitely developing wireless applications in the next 12 months.

Managers seem to have either a rosier view of wireless development or a better idea of their company's future plans. A similar study, but one that surveyed a group of general developers, showed that only 38 percent are planning the development of wireless applications.

Is the door closed to wireless? For five out of six respondents to the management survey, the answer is no. Only 15.2 percent of development managers said that they were absolutely not expecting to develop wireless applications over the next year. About 10 percent of those surveyed declined to answer this question, however, indicating some uncertainty as to their company's plans.

Source: Enterprise Development Management Issues: Winter 2001 ©Evans Data Corp

www.evansdata.com

BUSINESS BRIEFS

Merant International Ltd., which gained $54.5 million in cash for the sale of its **Micro Focus** division, posted a pretax loss of $2.9 million, or 27 cents per share, for its second quarter ending Oct. 31 on revenue of $32.5 million. Shortly after the quarter ended, the company picked up another $26.1 million when it sold the **DataDirect** division. The company warned that conditions are "very challenging" and cautioned about second-half expectations, saying it has experienced a slowdown in sales orders of more than $100,000 as it continues to shift its focus to the enterprise change management market . . . **Palm Inc.** has issued a $50 million convertible note to an unnamed investor to support wireless and enterprise initiatives. It followed the issue with the $19 million acquisition of **ThinAirApps Inc.**, a wireless solutions provider, in an all-stock transaction. Palm expected revenue of between $250 million and $280 million but a loss of 7 cents per share for its second quarter ending Nov. 30. Palm also announced in late November that its work force would be reduced by a net 250 employees and contractors, taking into account new hires with skills to match the company's plan to enhance its operation system and improve internal development processes. ■

CALENDAR OF EVENTS

LinuxWorld Conference & Expo — Jan. 29–Feb. 1
New York, IDG WORLD EXPO
www.linuxworldexpo.com

Embedded Executive Summit — Feb. 3–6
Half Moon Bay, Calif., CMP MEDIA LLC
www.esconline.com/exec

Wall Street on Java Technology — Feb. 4–5
New York, LIGHTHOUSE PARTNERS INC. & FLAGG MANAGEMENT INC.
www.javaonwallstreet.com

PalmSource Conference & Expo — Feb. 5–8
San Jose, Calif.
PALM INC.
www.palmsource.com

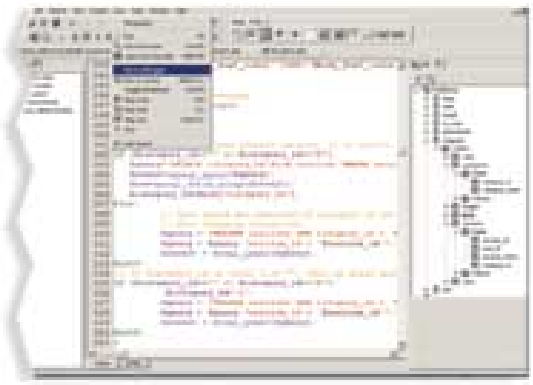
Software Management 2002 — Feb. 11–15
Anaheim, Calif.
SOFTWARE QUALITY ENGINEERING
www.sqe.com/sm

Applications of Software Measurement 2002 — Feb. 11–15
Anaheim, Calif.
SOFTWARE QUALITY ENGINEERING
www.sqe.com/asm

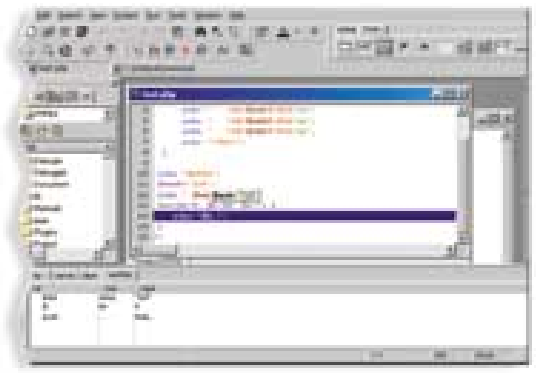
VSLive 2002 — Feb. 11–16
San Francisco
FAWCETTE TECHNICAL PUBLICATIONS
www.vslive.com/2002/sf

Internet Appliance Workshop — Feb. 19–21
San Jose, Calif.
INTERNET APPLIANCE WORKSHOP
www.netapplianceconf.com

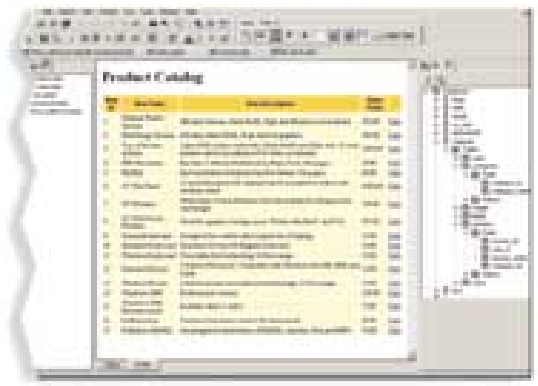
Information is subject to change. Send news about upcoming events to events@bzmedia.com.



Design.



Debug.



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